The Builder.

No. CIX.

SATURDAY, MARCH 8, 1845.

THE applications made to us for information on various points in the Metropolitan Buildings Act are still so numerous, as to lead us to believe that a large proportion of our readers are greatly interested in the subject. The inquiry, When may we omit sending for the district surveyor? has been repeated, it is hardly necessary to say, oftener than any other. One correspondent, a respectable builder, whose letter represents a dozen others now before us, asks:—

"Can you inform me, if it is really necessary that notice should be given to the district surveyor of such trifling works as the following, viz.: in fixing a kitchen range, for instance, it is generally necessary to *cut or bore a hole through the jaumb*, to lay on the service from the feeding cistern; another case is, that of laying on service-pipes or gas-mains to houses, where it is often necessary that the pipes should be carried *through the walls?* Surely no district surveyor would compel the giving of notice in such cases, although I am well aware the wording of the Act is very strong, *two* days' notice being required to be given, sec. 13, '*before any party wall, external wall, chimney stack or flues, shall be begun to be built, pulled down, rebuilt, cut into, or altered.*' Another case of far greater importance, is that respecting chimney-tubes, &c., above four feet high. Schedule F states that all such pots, tubes, &c. 'shall be fixed two feet at the least into the brick or stone-work of the flue;' now if I make my tubes so as to *slip down two feet into the flue*, is it necessary that I give notice to the district surveyor before so doing? This appears to me to be a point of great importance to the building trade, and I trust will soon be settled officially. It appears to me it can never be meant *that in all such trifling cases* notice must be given, and a (I will not say the) fee paid, as in many cases the fee would be far more than the value of the work done, and what for? It would simply have the effect of increasing the fees of the district surveyor, without any adequate advantage to the public, who would have to bear the expense, which, in very many cases, would be equal to the *poor rates*. In order that these, and many other points of such great importance to the builder, should be settled without delay, I would suggest that a society be formed by the builders for their protection; for should a difference arise between the builder and the district surveyor, it would be well that such a matter should be settled at once, and that the best advice should be had. It would fall hard on a single individual to be put to the expense and inconvenience of settling points which concern the trade; besides, the district surveyors have a society of their own for that purpose."

We referred to the points raised in the foregoing letter in our leading article of January the 25th (p. 37 *ante*), and expressed our opinion that, strictly speaking, a man may not let in an iron air-brick, for example, to his front or back wall, or make a hole for a bell-wire at the street-door, without sending notice to the district surveyor, and paying such fee as may be ordered by the official referees. Section 13 says two days' notice shall be given before *any* matter or thing shall be done which by this Act is *placed under the supervision of the surveyor*, unless specially excepted. And schedule L provides, that for *any* service performed by any surveyor, which is required by this Act, but not comprehended under the stated heads, such a fee is to be paid as the official referees may order, not exceeding 2*l*.

There seems to be no doubt that wherever instructions are given in the Act for the performance of certain things, wherever a mode is prescribed for the execution of works, they are placed under the supervision of the surveyor, and he may demand notice and a fee. Relative, then, to fixing chimney-pots, tubes, funnels, or cowls, if *more than* 4 *feet above* the brick or stone-work of the flue, insomuch as schedule F provides, that in that case they must be fixed at least 2 feet into the brick or stone-work of the flue, notice to the district surveyor (whose duty it is to see the provisions of the Act carried out) is required, and a fee may be demanded. Mr. Biers, in a letter to us on this subject (p. 45 *ante*), says, it cannot be admitted that the Act requires any notice to the district surveyor, and less so that any fee is payable if the directions be properly attended to. "I am borne out in this opinion," continues Mr. Biers, "upon reference to the amended Bill in the committee of the House of Commons, previous to the *amendments and alterations* proposed to the committee of the House, and assented to by them. In that Bill, among a great many other objectionable fees, was a fee specially set forth, of 10s. for inspecting chimney-pots, shafts, funnels, &c., above a certain height;" and which Mr. B. says, was expunged in consequence of the objections raised.

Taking out the special fee, however, while the clause remained that the fee for any service required by the Act and performed by any surveyor, not specified, should be appointed by the referees, did not get rid of its payment, but simply left open the question of "how much." Let us hope that the referees may name a fee for this, and similar trifling services, so low as to prevent just complaint. If, moreover, the enactment in question should lead to greater attention to the construction and arrangement of flues and fire-places, so as to obviate the necessity for unsightly and dangerous long pipes and cowls, it will, after all, do good service.

The steps to be pursued before taking down and rebuilding party-walls are matters in dispute, and shall have our early attention. Several cases are now before the referees, and will be decided in a few days. A letter on one of them will be found in another part of the present number.

An award of considerable importance has been recently made by the referees. Schedule K provides, with regard to back yards, or open spaces attached to dwelling-houses, that "every house hereafter built or rebuilt, must have an enclosed back yard or open space of at the least one square, exclusive of any building thereon, unless all the rooms of such house can be lighted and ventilated from the street, or from an area of the extent of at the least three-quarters of a square above the level of the second story, into which the owner of the house to be rebuilt is entitled to open windows for every room adjoining thereto." The builder of three houses at the corner of St. Martin's-lane and Cranbourn-street, thought that this provision did not require one square, or even three-fourths of a square, for *each* house, but that a building owner might, if he pleased, light and ventilate even three or more houses into an open area of only one square, and in this opinion he was supported by an eminent architect. The district surveyor, however, thought differently, and as at the houses in question the area left was only 17 feet 6 inches by 10 feet 7 inches, making little more than 1¾ square for the three houses, the works were stopped, and the case submitted to the referees.

Their award was, "that inasmuch as according to the plan which was submitted, the buildings are to have each a back yard, each such back yard must be of at the least one square, containing one hundred superficial feet, exclusive of any building thereon. And that if the site of the proposed back yards were occupied by buildings to the level of the third floor, then, inasmuch as the light and air would not have to descend so low, an area of three-quarters of a square, that is to say an area of seventy-five superficial feet, to each house instead of such back yards of one square each would suffice, but subject to the condition that the owner of every such house be entitled to open windows into such area for every such room adjoining thereto. And that if more than one of such houses be lighted and ventilated from one and the same area, then such area must consist of a space as many times greater than three-fourths of a square of 100 superficial feet, as there are more houses than one having rooms to be lighted and ventilated therefrom, subject as to every house, to the aforesaid condition, that owners thereof are entitled to open windows into such area for every room adjoining thereto."

The portion of schedule K which relates to *back yards*, and under which this award is made, seems obscure and defective, and the referees have doubtless decided according to what they believed was the intention of the legislature. By requiring an area of three-fourths of a square for *each* house, they ask no more than is necessary for health, but it is certainly doubtful whether the strict *words* of the schedule go so far. The requirement is, that every house must have an enclosed back yard or open space, of at least one square, *unless* all the rooms can be lighted and ventilated from the street, or from an area of at least three-quarters of a square above the level of the second story; but the schedule certainly does not *say* that this area shall be appropriated exclusively to this one house, any more than that the street should be. And before this award was made, we unquestionably should have urged, there was nothing in the schedule to prevent the erection of three or more houses, around an area equal to three-fourths of a square (inefficient as such an area would be), provided the other requirements of the schedule were complied with.

BRITISH ARCHÆOLOGICAL ASSOCIATION.—We have purposely omitted any allusion to the unfortunate differences which have arisen in the council of this association, hoping that a little consideration would lead to an adjustment, and knowing that every word that was printed would probably make this more difficult. The objects of the association are so excellent, and its organization so far advanced, that we should greatly lament to see its existence jeopardized by what is, after all, a mere personal dispute.

WESTMINSTER ABBEY.

In the last number of this journal, will be found some suggestions for the better arrangement of the monuments in this edifice. We believe that the subject has long engaged the attention of the Dean and Chapter, and important changes would doubtless have been made ere this, were not very considerable difficulties in the way of alteration.

It is considered, that the removal of monuments, originally in churches, to buildings of distinct character, would be attended with impropriety. If this view be persevered in, it will be quite sufficient to obviate the removal to Mr. Barry's proposed quadrangle in New Palace-yard. The arrangement advocated by us, has been found to answer well in the Temple Church, and would unquestionably be a great improvement to the Abbey. However, matters are not likely to remain long as they are, and the attention bestowed, by those now in authority, to the improvement of the building in some other particulars, augurs well for its future condition. It has been decided to eject the organ from its present objectionable position over the doorway of the rood-screen, where it greatly impedes the view, from the nave, of the eastern extremity of the building. It will be divided into two portions, each of which will stand on opposite ends beneath the arches, the small choir organ being allowed to remain. We are by no means ready to assent to the opinion of Mr. Cockerell, and to consider the organ well placed, as it now stands in the Abbey, and in most of our cathedrals. The length of the Gothic cathedral unquestionably adds to the majesty of the pile, and we would not sacrifice the effect, resulting from the long perspective of the interior, which the original architect tried successfully to gain, for the supposed advantage in the modern arrangement. We do not deny that the situation of a building, and the approaches to it, do not receive that attention in this day, which resulted in so much delight to the beholder in the temples of the Greeks. Our monuments may not be effectively placed at the ends of streets, or in open squares, but to sacrifice the unquestionable advantages of space, size, and length, in a building, is, we deem, extending a favourite theory farther than sound judgment warrants. Also, it may be well to recollect, that the same rules are not always applicable to what we are looking *at*, and which is *before* our eyes, as to that we are standing in, and which is around and about us. The Gothic architects were probably as well aware of the adjuncts to beauty in a building as those of any age.

The organ at Westminster, seen from below, is somewhat ineffective, but, on close examination, proves to be rather rich in ornament, carved with elaborate care and delicacy, and evincing considerable feeling for the style.

The stained glass for the windows of the south transept has been completed by Messrs. Ward and Nixon, and is already within the precincts of the Abbey. We may, therefore, expect to see something of it very shortly.

We believe that no decision has yet been arrived at, as to the placing of seats for the overflowing congregation in the transepts, which change was so strongly commented upon in some of the daily papers. If increased accommodation be urgently demanded, we trust it may be gained in some way less opposed to the distinctive character of a Gothic church. The works of architecture are the most valuable records of the past, but their importance is lessened or destroyed whenever an innovation is permitted to creep in. The nave and triforium were at one time occupied by worshippers, and a considerable number might find room in either now. Were the nave made available, there would probably be a greater observance of decorum than appears to be now practised by the visitors: people are too much accustomed to consider all that is not in the choir the same as what is without the walls of the church. The removal of the monuments would have similar tendency.

We hope at no distant period to see the unsightly stalls of the choir replaced by rich and elegant carving, equal to any existing. The skill of modern artists in this branch is not inferior to that of their predecessors, yet, strange to say, it is little known or called for. The space eastward of the stalls should be enclosed with parcloses of wood or stone, as in the cathedrals. E. H.

ON RENDERING PAPER-HANGINGS USEFUL AS WELL AS ORNAMENTAL.

BY MR. F. WHISHAW,

Paper-hangings are of several kinds, some of which are made in imitation of velvet, damask, chintzes, &c., while others are in imitation of marbles, stucco-work, &c.

There are three methods by which paper-hangings are painted: the first by printing on the colours, the second by means of the stencil, and the third by using the pencil as in other kinds of painting.

In the first method the impression is made by wooden blocks, in which the patterns are cut, the parts to be shewn being made to project from the surface by cutting away all the other parts. The blocks being charged with the required colour, properly tempered, are pressed on the paper prepared with a proper ground of colour or varnish.

The colour to be used by the printer is spread on oil-cloth, laid on a flat block a little larger than the print; this operation is performed by an attendant, who spreads the colour with a brush on the block, between every stroke and impression made by the printer.

When the sheet is printed throughout, it is hung up to dry, and the operation is repeated with another piece of paper.

For each separate colour in a particular pattern there is a separate block, so that a piece of paper has to pass under the printer's hands as many times as there are distinct colours in the pattern to be produced; some modern papers have required as many as seventy-two separate blocks. The placing of the different blocks in the exact position on the paper requires considerable skill on the part of the printer.

The second method, which is adopted for common paper-hangings, is merely to print the outlines, and fill in the colours by stencilling.

The stencils are either of leather or oil-cloth, and are cut out to correspond with all the figures to be printed in one colour, and, being placed flat on the paper to be printed, the colour is rubbed over the upper side, thus passing through all the parts cut out, and giving the proper impression on the paper below.

This method is only applicable for patterns of the most common description, it being impossible to represent fine lines by the stencilling process.

The third method, *viz.*, by pencilling, is only used for the more costly hangings in imitation of Chinese and India papers, and is performed in the same manner as other paintings in water or varnish; sometimes the outline is printed, and then the colouring performed by pencilling. The first of the three methods which I have endeavoured briefly to describe is the one in ordinary use, in which the order of printing is first to lay on the ground colour, next the various shades, then the lights, and lastly the outline. Very fine lines and points, or dots, are introduced by means of rules and points of the particular forms required, which are let into the wooden blocks, as types are let into the small blocks used for printing illustrations to books.

The above is only an outline of the ordinary methods used; but, as my object is to introduce a system of useful paper-hangings, I need not enter more into detail with regard to methods in practice of producing the finest specimens of hangings, but proceed at once to the object of this communication.

My mind has long been impressed with the idea of rendering the modern hangings of walls useful as well as ornamental.

For this purpose I have proposed that useful information should, in the more ornamental patterns, be so blended with the design as not to disfigure it, and thus ornament, with amusement and instruction combined, would add greatly to the value of paper-hangings, and often serve as a ready mode of reference for information desired. When wanted especially for use, without any regard to ornamental appearance—as, for instance, Sunday and other schools, for the lecture-room of colleges and seminaries—I propose to introduce the information in panels.

I have arranged, mixed with several ordinary patterns, some specimens illustrative of my proposition; and, I think, it will be allowed that in one or two of them the patterns are not disfigured by the introduction of the useful information they contain in the shape of historical and other facts.

In one pattern I have introduced words in several languages, which would be especially useful if carried out to a sufficient extent.

The greatest—indeed I believe the only objection which has been raised against the introduction of these useful paper-hangings is the cost.

Now, for patterns likely to be extensively used in infant and other schools and seminaries, it would be worth while to cut out the writing in wood-blocks, or fix in metal letters for each particular sentence to be introduced.

Another mode I propose is, to have moveable types introduced into a frame, so arranged as to form a substitute for one of the numerous blocks required in cases where the pattern is made up of a variety of colours. Thus, when as many copies as are likely to be required at the time have been printed, the type is to be distributed, and again set up for another piece of information, while the rest of the pattern is printed with the different blocks as usual.

A third mode which I propose is to print the patterns complete in the ordinary way, leaving, however, spaces for the writing to be inserted according to the style and fancy of individuals. This is by no means so expensive a method as persons unacquainted with the process would be led to suppose.—*Transactions of Soc. of Arts, Vol. LV.*

[A similar suggestion appears in Loudon's "Encyclopædia of Cottage and Villa Architecture." There is no reason but the expense, says the Encyclopædia, why a geographical paper should not be formed; or one exhibiting all the principal rivers, mountains, and cities in the world; or the portraits of eminent men with their names; or perpetual almanacs; or lists of weights and measures; or chronological or arithmetical tables; or, in short, any useful and instructive subject which it would be beneficial to the cottager to have constantly before his eyes. We all know how easily, and yet how deeply, the mind is impressed with objects that we are continually in the habit of seeing; and that what is learned through that medium in childhood is rarely, if ever, forgotten in after-life. There is also a paper on this same subject in the ninth volume of the "Penny Magazine," p. 52, with an engraved pattern. We should be glad to see it carried out.—Ed.]

BURIAL-GROUND PRACTICES.

Since the publication in our journal of Mr. G. A. Walker's communications on the subject of proceedings at Spafield's burial-ground, evidence has been adduced not simply confirmatory of all that was then asserted, but of horrors and atrocities almost incredible, and public attention is so fully aroused, that we may now confidently expect, before long, some legislative enactment to protect her Majesty's lieges from the fatal evils of the system. One witness, a lady, stated before the magistrate at Clerkenwell, that she lived in a house near the grave-yard, but had been obliged to leave it, as well as many other persons in the neighbourhood, in consequence of the intolerable and unearthly stench proceeding from the bone-house. One frosty night the smell was still worse than usual. She and her son ascended the top of the wash-house, which commands a view of the ground, thick volumes of smoke and sparks were issuing from the chimney of the bone-house; she saw two men carrying something in a basket which appeared very soft and to shake; took it to be human flesh. Her tenants who lived near the place were constantly complaining of illness from the smell. The weather became hot, and two of the children died from putrid fever. "Great sensation" was excited by this statement, say the newspaper accounts; and well there might be.

The loud cheering with which Sir James Graham was greeted in the House of Commons, when he said this case was one in which, if clearly made out, he should certainly be inclined to interfere, shewed plainly the state of public opinion on the subject. The audacity displayed by the manager, Mr. A. Bird, in the cool denial of the facts as first mentioned, and threat of legal proceedings, which we admitted

into our columns, almost hoping, for the sake of humanity, that the statement of which he complained *was* exaggerated,—has seldom been surpassed. This *rara avis* will be thought a "black swan," we fear.

TRAFALGAR-SQUARE FOUNTAINS.

After many months of expectation and preparation the two fountains have at last made their appearance in the centre of the two large basins made to receive them, which have been so often and so facetiously reported upon by our ubiquitous friend *Punch*. The first thing that strikes the spectator, on looking at these tazza, is their diminutiveness when compared to the extent of the square, and also to the basins in which they are placed; there is no doubt but that they are a trifle too small. I venture to think myself that the effect would have been much better if the upper tazza of each of the fountains had been equal in size to the bottom one as now erected, and the bottom one itself some three feet larger in diameter.

Perhaps the difficulty of getting good sound blocks of granite, suitable for a basin of such large dimensions, was considered as a matter of too much uncertainty to run the risk of attempting; but still even admitting the probable difficulty, I think an attempt might have been made to get a block sufficiently large that the whole proportion of the fountains might have been very considerably increased, so as to render them suitable to the great space they have to fill.

The fact of their being surrounded on three sides with a high wall, and on the remaining side with a lofty column, is a certain argument that unless they were of large dimensions, they would appear *smaller than they really are*, and look comparatively insignificant when viewed in juxtaposition with the surrounding objects overtopping them on all sides.

Taken by themselves, without any reference to their local position, they are exceedingly chaste in design, plain, simple, and unadorned, as all works in granite ever should be, without any attempt at minute detail, or elaborate sculpture. Ornamental work, when made of granite, loses all its effect, if cut up into any thing like florid design, tracery, or open-work, as it is quite contrary to the character of the stone; so far, then, these fountains are strictly in keeping, in my opinion, with the character of the material of which they are made, and, with the exception above alluded to, also in keeping with the prevailing design of the square itself. Not that I consider the design of the terraces, &c., the best that might have been adopted for such a situation, as I feel convinced that there are several errors in the artistic perspective of the general planning of the square and terraces, which, in certain positions, have any thing but a pleasing effect.

With respect to the workmanship and skill displayed in the finish of these fountains, I think it may be unhesitatingly stated, that there is nothing in the country of the same material to surpass, if indeed to equal them; they are made of fine, deep red-coloured Peterhead granite, so finely chiseled and polished, as to be equal in brilliance to the finest and smoothest statuary marble; on this head, at least, they have elicited the highest admiration from practical men and connoisseurs in such matters.

They are the work of the Messrs. Macdonald, who made the pedestal for the Wellington statue in front of the Royal Exchange, also a very beautiful specimen of granite work; the hydraulic part of the matter is intrusted to Messrs. Easton and Amos, who are well known for their practical acquaintance with such matters; the water to supply the fountains is obtained from two wells, one in front of the National Gallery and the other behind it which are connected together by means of a tunnel, that of course passes directly under the National Gallery, behind which is also placed the engine-house for raising the required water into the tanks, &c., before it is forced through the fountains, which will be at the rate of between five and six hundred gallons per hour: it will be forced up a considerable height from the central jet; it will then be received into the first or upper basin or tazza, over the sides of which it will flow into the second basin or tazza in a continuous stream, and from hence into the large basin; in addition to which there are four spouts from the dolphin's heads immediately under the bottom basin. The lower fall, however, would be much more effective if it stood on a higher base than at present.

Joseph Lockwood, Surveyor.
6, Childs-place, Temple.

JOHN SMEATON, THE ENGINEER.

Mr. Parker has commenced the publication of a series of instructive books at low prices for general use in families, under the title of "Collections in Popular Literature." They include history, biography, science, travels, and miscellanies, and though uniform in appearance and object, each work is complete in itself. To one of the volumes of this series, in the class of science, we have already referred. The following sketch of the life of Smeaton is from the biographical series, wherein it is proposed to connect with the life of an individual the history of the particular department of knowledge that he aided to extend. Thus, with Watt, the steam-engine would be spoken of; with Brindley, canals; and with Smeaton, light-houses. In our present extracts we confine ourselves to the individual, and may perhaps speak of his great undertaking hereafter.

John Smeaton was born the 28th of May, 1724, at Ansthorpe, near Leeds, Yorkshire. Little is recorded of his parentage or early education: but we find that his father was a respectable attorney, and that the family lived in a house built by the grandfather of the younger Smeaton.

Smeaton seems to have been born an engineer. The originality of his genius and the strength of his understanding appeared at a very early age. His playthings were not the toys of children, but the tools men work with; and his greatest amusement was to observe artificers, and to ask them questions. Having watched some millwrights at work, he conceived the idea of constructing a windmill, and, to the alarm of his friends, was one day perceived on the top of his father's barn attempting to fix his model. On another occasion he accompanied some men who went to fix a pump at a neighbouring village, and observing them cut off a piece of bored pipe, he managed to procure it, and made a working model of a pump that raised water very well. These anecdotes are related of him while he was yet a mere child in petticoats, and probably before he had attained his sixth year. At the age of fourteen or fifteen he had made for himself an engine to turn rose-work, and he made several presents to his friends of boxes in wood and ivory, as specimens of its operation.

In the year 1742, Mr. Holmes, afterwards his partner in the Deptford Water-works, visited Smeaton, and could not conceal his astonishment at the mechanical skill displayed by the young engineer; he forged his iron and steel and melted his metal; he had tools of every sort for working in wood, ivory, and metals. He had made a lathe, by which he had cut a perpetual screw in brass, a thing very little known at that day. All these resources were not furnished to him by rich and wealthy parents, nor had he the advantage of masters in his various pursuits; on the contrary, by the strength of his genius, and by indefatigable industry, he acquired at the age of eighteen an extensive set of tools, and the art of working in most of the mechanical trades, and Mr. Holmes, himself a good mechanic, says that few men could work better.

Astronomy was one of his most favourite studies, and he contrived and made several astronomical instruments for himself and friends. In later years, after fitting up an observatory at his house at Ansthorpe, he devoted much time to it when he was there, even in preference to engineering.

Smeaton's father being an attorney, was desirous to educate his son for the same profession. He was therefore sent to London in 1742, where during a few terms he attended court; but finding the legal profession distasteful to him, and not to suit "the bent of his genius," he wrote a strong memorial on the subject to his father, who had the good sense to allow him from that time to pursue the path which nature pointed out to him. He continued to reside in London, and about the year 1750 he commenced the business of mathematical instrument maker. In 1751 he invented a machine to measure a ship's way at sea, and a compass of peculiar construction, touched by Dr. Knight's artificial magnet. He made two voyages in company with Dr. Knight for the purpose of ascertaining the merits of these contrivances.

In 1753 he was elected a fellow of the Royal Society, and his admirable papers inserted in the Transactions of that body sufficiently evince how highly he deserved that distinction. In 1759 he received by an unanimous vote their gold medal, for his paper entitled "An Experimental Inquiry concerning the natural powers of wind and water to turn mills and other machines depending on a circular motion." This paper was the result of experiments made on working models in 1752 and 1753, but not communicated to the society till 1759, by which time he had had abundant opportunity of applying these experiments to practice in a variety of cases, and for various purposes, so as to assure the society that he had found them to answer. He discovered by these means that wind and water could be made to do one-third more than was before known. In the year 1754 he made a voyage to Holland, travelling for the most part on foot, or in the trekschuiten or drag-boats, the national conveyance of the country, and thus made himself acquainted with the most remarkable works of art in the low countries.

In December, 1755, the Eddystone Lighthouse was burnt down. Mr. Weston the chief proprietor, and others, were desirous of rebuilding it in the most substantial manner, and through the recommendation of the Earl of Macclesfield, whose friendly conduct to Smeaton we have already noticed, they were induced to appoint Smeaton as the most proper person to rebuild it.

Smeaton undertook the work, and completed it in the summer of 1759. The completion of the work does not seem to have had the immediate effect of procuring him full employment as a civil-engineer: in 1764, being in Yorkshire, he offered himself a candidate for the office of one of the receivers to the Greenwich Hospital estates;* and on the 31st December in that year he was appointed, at a full board at Greenwich Hospital, in a manner highly flattering to himself. In this appointment he was greatly assisted by his partner Mr. Walter, who managed the accounts, and left Smeaton leisure and opportunity to exert his abilities on public works, as well as to make many improvements in the mills, and in the estates of Greenwich Hospital. By the year 1775 he had so much business as an engineer, that he wished to resign this appointment, but was prevailed upon to continue in the office about two years longer.

Among the many valuable public services of Smeaton a few only can be mentioned in this place. He completed the erection of new lighthouses at Spurn Head at the mouth of the Humber: he built the fine bridge over the Tay at Perth: he laid out the line of the great canal connecting the Forth and Clyde, and made the river Calder navigable; a work that required great skill and judgment, on account of its impetuous floods. On the opening of the great arch at London-bridge by throwing two arches into one, and the removal of a large pier, the excavation around and under the starlings was so considerable, that the bridge was thought to be in great danger of falling. Smeaton was then in Yorkshire, but was sent for by express, and arrived with the utmost dispatch: on his arrival the fear that the bridge was about to fall prevailed so generally, that few persons would pass over or under it. Smeaton applied himself immediately to examine it, and to sound about the starlings as minutely as possible: his advice to the committee was to repurchase the stones which had been taken from the middle pier, then lying in Moorfields, and to throw them into the river to guard the starlings. This advice was adopted with the utmost alacrity, by which simple means the bridge was probably saved from falling, and time afforded for securing it

* This was the Derwentwater estate, which was forfeited in the year 1715, and its revenues applied by Parliament towards the funds of Greenwich Hospital. It consists of mines of lead, containing much silver, as well as lands. It required careful management, and the knowledge of mining details to make it profitable. Smeaton contrived more efficient machines and better modes of working the mines and managing the estate.

in a more effectual manner. "This method of stopping the impetuous ravages of water," says Mr. Holmes, "he had practised before with success on the river Calder; on my calling on him in the neighbourhood of Wakefield, he shewed me the effects of a great flood, which had made a considerable passage over the land; this he stopped at the bank of the river, by throwing in a quantity of large rough stones, which with the sand, and other materials washed down by the river, filling up their interstices, had become a barrier to keep the river in its usual course."

In 1771 Smeaton and Holmes made a joint purchase of the water-works for supplying Deptford and Greenwich with water. On examining the books of the former proprietors, it appeared to have been a losing concern during many years; but the skill of Smeaton soon brought the undertaking into such a state as to be of general use to those for whom it was intended, and moderately profitable to himself and partner. In noticing this subject Mr. Holmes makes a few general remarks on the character of Smeaton:—"His language either in speaking or writing was so strong and perspicuous, that there was no misunderstanding his meaning, and I had that confidence in his abilties as never to consider any plan of improvement which he proposed, but only to see it executed with scrupulous exactness; at the same time, he was so open to reason in all matters, that during a constant communication of our opinions for upwards of twenty years, after we had laid them fully before each other we always agreed, and never had the slightest difference."

It must be remembered that Smeaton lived before the time when the genius of Watt had rendered the steam-engine the useful and obedient servant of man; and consequently that much of the power now furnished by steam was then supplied by the wind. Hence the mechanics of windmills was an important study to the engineer, and Smeaton erected a vast variety of mills in which he turned to useful account the results of his experiments in 1752 and 1753. His usual habit was to confirm the conclusions of theory by direct experiment. He also erected a steam-engine at Ansthorpe, and made experiments thereon to ascertain the power of Newcomen's engine, which he improved and brought to a far greater degree of certainty both in its construction and powers.

During many years the opinion of Smeaton was held in such high esteem, that no great works were undertaken throughout the kingdom without first applying to him; he was constantly consulted in parliament, and was regarded as an ultimate reference on all difficult questions connected with his profession. It was his constant practice to make himself fully acquainted with every subject before he would engage in it, and then his known integrity and lucid powers of description secured the respect and attention of all. In the courts of law he was frequently complimented by Lord Mansfield and others for the new light he threw on difficult subjects.

About the year 1785 Smeaton's health began to decline, and he then endeavoured to retire from business in order to gain time to publish an account of his inventions and works. This was one of the wishes nearest to his heart, for as he often said, "he thought he could not render better service to his country than by doing that." He had just completed his account of the Eddystone lighthouse when he was prevailed on to continue his services as engineer to the trustees for Ramsgate harbour. The works at Ramsgate were begun in 1749, but had been conducted with very indifferent success until Smeaton was called in to superintend them in 1774. He completed the magnificent pier and harbour of this place in 1791, and thus established a secure and much needed place of shelter in the Downs.

A man whose life is so beneficially devoted to the service of the public can scarcely hope to enjoy leisure and retirement during which he may look back upon the past, and leave a written record of his exertions. Smeaton was so constantly and urgently employed, that he could not achieve much with his pen. On the 16th September, 1792, he was seized with an attack of paralysis, induced by over-exertion, and this attack carried him to the grave on the 28th of the next month, in the 69th year of his age.

During his illness he dictated several letters to his old friend Mr. Holmes. In one of them he describes minutely his health and feelings, and says, "in consequence of the foregoing, I conclude myself nine-tenths dead, and the greatest favour the Almighty can do (as I think) will be to complete the other part, but as it is likely to be a lingering illness, it is only in His power to say when that is likely to happen." His daughter, Mrs. Dickson, says that he always apprehended the attack which terminated his life, as it was hereditary in his family. He dreaded it only as it gave the melancholy possibility of outliving his faculties or the power of doing good; or, to use his own words, "lingering over the dregs after the spirit had evaporated." Indeed, the decay of his mental faculties seems to have been that which he most dreaded. He would sometimes complain of slowness of apprehension, and would then excuse it with a smile, saying, "it could not be otherwise, the shadow must lengthen as the sun went down." When seized with paralysis he was resigned to the event, anxious to soften any alarm to his family, and was thankful that his intellect was spared. But his invariable wish was to be released. He expressed particular pleasure in seeing the usual occupations of his family resumed; and reading, drawing, music, and conversation excited the same interest and the same cheerful and judicious observations as ever. One evening he was requested to explain some phenomena respecting the moon, which was seen from the room shining brightly. He gave a full explanation, then fixed his eyes full upon the object in question, and after regarding it stedfastly for some time, he observed, "How often have I looked up to it with inquiry and wonder, and to the period when I shall have the vast and privileged views of an hereafter, and all will be comprehension and pleasure."

We learn from his daughter Mrs. Dickson, that early in life Smeaton attracted the notice of the eccentic Duke and Duchess of Queensbury, on account of the strong personal likeness which he bore to their favourite Gay the poet. Their first acquaintance was made in a singular manner: it was at Ranelagh when walking with Mrs. Smeaton, he observed an elderly lady and gentlemen gaze steadily upon him, they stopped and the duchess said, "Sir, I don't know who you are, or what you are, but so strongly do you resemble my poor dear Gay, that we *must* be acquainted; you shall go home and sup with us, and if the minds of the two men accord as do the countenance, you will find two cheerful old folks who can love you well, and I think (or you are an hypocrite) you can as well deserve it." The invitation was accepted, and as long as the duke and duchess lived the friendship was cordial and uninterrupted. During his visits cards were sometimes introduced. Smeaton detested cards, and could not confine his attention to the game. On one occasion the stakes were already high, and it fell to Smeaton to double them when, neglecting to deal the cards, he was busily occupied in making some calculations on paper which he placed upon the table. The duchess asked eagerly what it was, and Smeaton replied cooly, "You will recollect the field in which my house stands may be about five acres three roods and seven perches, which, at thirty years' purchase, will be just my stake, and if your grace will make a duke of me, I presume the winner will not dislike my mortgage." The joke and the lesson had their effect, for they never played again but for the merest trifle.

Smeaton procured a situation in a public office for a clerk in whom he placed the greatest confidence, and jointly with another became security for him to a considerable amount. This man committed the crime of forgery, was detected, and given up to justice. Mrs. Dickson says, "The same post brought news of the melancholy transaction, of the man's compunction and danger, of the claim of the bond forfeited, and of the refusal of the other person to pay the moiety! Being present when he read his letters, which arrived at a period of Mrs. Smeaton's declining health, so entirely did the command of himself second his anxious attention to her, that no emotion was visible on their perusal, nor, till all was put into the best train possible, did a word or look betray the exquisite distress it occasioned him. In the interim, all which could soothe the remorse of a prisoner, every means which could save (which did, at least from public execution), were exerted for him, with a characteristic benevolence, active and unobtrusive."

Smeaton was a man of indefatigable industry and great moral probity. With ample opportunity of amassing wealth, he rendered its acquisition but a secondary object on all occasions; his first aim always being to execute the task intrusted to him in the most skilful and perfect manner. Had his object been to amass a fortune, he might have received many lucrative appointments besides those which he actually held. The empress Catherine of Russia attempted to secure his services for her own country by most magnificent offers; but Smeaton preferred to dedicate his time and talents to the service of his country. "The disinterested moderation of his pecuniary ambition," says his daughter, "every transaction in private life evinced; his public ones bore the same stamp; and after his health had withdrawn him from the labours of his profession, many instances may be given by those whose concerns induced them to press importunately for a resumption of it; and when some of them seemed disposed to enforce their entreaties by further prospects of lucrative recompense, his reply was strongly characteristic of his simple manners and moderation. He introduced the old woman who took care of his chambers in Gray's Inn, and shewing her, asserted "that her attendance sufficed for all his wants." The inference was indisputable, for money could not tempt that man to forego his ease, leisure, or independence, whose requisites of accomodation were compressed within such limits! Before this, the princess Daschkaw made an apt comment upon this trait of his character; when, after vainly using every persuasion to induce him to accept a carte blanche from the empress of Russia as a recompense for directing the vast projects in that kingdom —she observed "Sir, you are a great man, and I honour you! you may have an equal in abilities, perhaps, but in character you stand single, The English minister, Sir Robert Walpole, was mistaken, and my sovereign has the misfortune to find one man who has not his price."

In all the social duties of life Smeaton was most exemplary; and he was a lover and encourager of real merit in whatever station of life he found it. To strangers, his mode of expression appeared warm and even harsh; but Mr. Holmes refers it to the intense application of his mind, which was always in the pursuit of truth, or engaged in investigating difficult subjects: hence, when any thing was said that did not tally with his ideas, he would sometimes break out hastily. As a friend, he was warm, zealous, and sincere; as a companion, always entertaining and instructive, and none could spend their time in his company without improvement. In his person Smeaton was of middle stature, but broad and strong-made, and possessed of an excellent constitution. He was remarkable for the plainness and simplicity of his manners.

After his death, his papers, consisting of plans, reports, and treatises, on almost every branch of engineering, were published by the Society of Civil Engineers.

THE MORMON TEMPLE AND ITS BUILDERS.

At the summit, overlooking the whole landscape for nearly twenty-five miles in all directions, stands the Mormon temple, the largest structure in any of the western states. When completed, it is assumed that the entire cost will not vary much from four hundred thousand dollars. Nothing can be more original in architecture—each of its huge pilasters rests upon a block of stone, bearing in relief on its face the profile of a new moon, represented with a nose, eye, and mouth, as sometimes seen in almanacs. On the top, not far from fifty feet high, is an ideal representation of the rising sun, which is a monstrous prominent stone face, the features of which are colossal, and singularly expressive. Still higher are two enormously large hands, grasping two trumpets, crossed. These all stand out on the stone boldly. Their finish is admirable, and as complete as any of the best specimens of chiselling on the Girard College, at Philadelphia. The interior is to be one vast apartment, about 128 feet by 80, simply sub-

divided by three great veils of rich crimson drapery, suspended from the ceiling overhead. Neither pews, stools, cushions, nor chairs are to encumber the holy edifice. In the basement is the font for baptism, which, when completed according to the design, will be a pretty exact imitation of the brazen laver in Solomon's Temple. The tank is perhaps eight feet square, resting on the backs of twelve carved oxen. They are of noble dimensions, with large spreading horns, represented to be standing in water half-way up to their knees. The execution of the twelve oxen evinces a degree of ingenuity, skill, and perseverance, that would redound to the reputation of an artist in any community. When they are finally gilded, as intended, and the laver is made to resemble cast brass, together with the finishing up of the place in which this unique apparatus of the church is lodged, as a whole, that part of the temple will be one of the most striking artificial curiosities in this country. When the officiating priests, in their long robes of office, lead on a solemn procession of worshippers through the sombre avenues of the basement story, chanting as they go, the effect must be exceedingly imposing even to those who may deplore the infatuation of a whole city of Mormon devotees. Although estimated to cost so large a sum, the walls of the temple are gradually rising from day to day, by the concurrent, unceasing labour of voluntary labourers. Every brother gives one day in ten to the undertaking. Thus there are always as many hands employed as can be conveniently on the work at the same time. The architect and different master-workmen are constantly at hand to direct the operations. Each day, therefore, ushers in a new set of operatives. Some fine brick buildings are already raised on the different streets, and stores are continually growing up. Even were the Mormons to abandon the city, as it is asserted that they will, somebody will own the property; and a city it is, and a city it will continue to be, of importance, unconnected with the false religious tenets of its inhabitants. But the Mormons will never leave Nauvoe; no, never! Its associations are hallowed to their excited imaginations. They would relinquish life as soon as they would voluntarily, *en masse*, leave their glorious habitation, which to them is the gate of heaven.—*Boston Paper*. [Is this account *American* in more senses than one?—Ed.]

RECOMMENDATIONS CONTAINED IN THE SECOND REPORT OF THE HEALTH OF TOWNS COMMISSION. Feb. 1845.

1st. That in all cases the local administrative body, appointed for the purpose, have the special charge and direction of all the works required for sanatory purposes, but that the Crown possess a general power of supervision.

2nd. That before the adoption of any general measure for drainage, a plan and survey, upon a proper scale, including all necessary details, be obtained, and submitted for approval to a competent authority.

3rd. That the Crown be empowered to define and to enlarge, from time to time, the area for drainage included within the jurisdiction of the local administrative body.

4th. That the local administrative body appoint the executive and other officers under it; that the appointment and dismissal of the chief surveyor be subject to approval; that such officer produce proof of his qualification for the office to which he shall be appointed, and, if required, be subject to an examination.

5th. That upon representation being made by the municipal or other authority, or by a certain number of inhabitants of any town or district, or part thereof, setting forth the defects in the condition of such place as to drainage, sewerage, paving, cleansing, or other sanatory matters, the Crown direct a competent person to inspect and report upon the state of the defects, and if satisfied of the necessity, have power to enforce upon the local administrative body the due execution of the law.

6th. That the management of the drainage of the entire area as defined for each district be placed under the jurisdiction of one body.

7th. That the local administrative body be empowered to raise money for purchasing the rights of mill-owners or others, when the mill-dams or other obstructions injuriously affect the drainage of the district comprised within the area defined, inquiry in each case having been previously made by the proper officer into the necessity of the purchase and the amount to be paid.

8th. That the construction of sewers, branch sewers, and house drains, be intrusted to the local administrative body.

9th. That the landlords of houses be rated for the purposes of the Act when the houses are let in separate apartments, or when the rent is collected more frequently than once a quarter, or when the yearly rent is less than ten pounds, such a deduction being made from the gross amount of the rate, as may be considered a fair equivalent for the labour and losses incident to the collection of rent on such property.

10th. That the duty of providing the funds necessary, be imposed upon the local administrative body, and that the cost of making the main and branch sewers be equitably distributed among the owners of the property benefited; and that the expense of making the house drains be charged upon the owners of the houses to which the drains are attached. That the expense remain a charge upon the properties, to be levied by a special rate upon the occupiers, and recovered with interest by annual instalments within a certain number of years, unless the owners prefer to pay the cost in the first instance, and except in the cases mentioned in the ninth recommendation.

11th. That some restriction be placed on the proportionate rates in the pound to be levied in each year; but if the local administrative body finds that there is need of larger funds for the immediate execution of the works for sanatory measures than can be provided by such rates, it be empowered to raise by loan, on security of the rates, subject to the approval of the crown, such sums as may be requisite for effecting the objects in view. That provision always be made for the gradual liquidation of such debts, within a limited number of years.

12th. That the whole of the paving, and the construction of the surface of all streets, courts, and alleys be placed under the management of the same authority as the drainage, and that the limits of jurisdiction, for both purposes, wherever practicable, be co-extensive. That the principle above submitted, in respect to the cost of making drains and sewers, and the equitable distribution of the expense, be adhered to in the case of laying out, levelling, and paving of streets, courts, and alleys; but for the purpose of ensuring the greatest efficiency and economy in the execution of the work, it be performed by the local public officers.

13th. That the provisions in local Acts, vesting the right to all the dust, ashes, and street-refuse, in the local administrative body, be made general; and that the cleansing of all privies and cesspools at proper times, and on due notice, be exclusively intrusted to it.

14th. That many of the more common nuisances which prevail within towns, such as large collections of dung, be declared a nuisance, and be summarily abated.

15th. That, after such a period as it may be deemed advisable to fix, the provisions in local Acts for preventing the escape of dense black smoke from furnaces and steam-engines in towns, be made general. Also that these provisions be applied, so far as is practicable, to steam-boats usually plying within the limits of any city or town, subject to the operation of such Act.

16th. That in cases where complaints shall be substantiated, that the inhabitants of any house, street, or district in towns, are injuriously affected by the noxious exhalations of any factory, power be given to the local administrative body to ascertain the cause of such exhalations, and to take legal proceedings for the abatement of the evils, in the event of such evils not being removed on due representation.

17th. That it be rendered imperative on the local administrative body charged with the management of the sewerage and drainage to procure a supply of water in sufficient quantities not only for the domestic wants of the inhabitants, but also for cleansing the streets, scouring the sewers and drains, and the extinction of fire. That the said body have power to contract with companies or other parties or make other necessary arrangements.

18th. That where any independent body has the management of the supply of water, it be liable to comply with the demand of the local administrative body on equitable terms; and that further, the local administrative body be empowered to purchase the interest in water-works, subject to the control of the Crown whenever the proprietors are willing to dispose of them. Further, that on the establishment of new companies, it be made a condition that the local administrative body be enabled to purchase the works after the lapse of a certain number of years, upon certain terms, and upon a rate of interest to be fixed; and that with a view to economy, competition between water-companies be discouraged as far as practicable.

19th. That as soon as pipes are laid down and a supply of water can be afforded to the inhabitants, all dwelling-houses, capable of benefiting by such supply, be rated in the same way as for sewerage and other local purposes; and the owners of small tenements be made liable to pay the rates for water as already recommended in respect to drainage.

20th. That every facility be afforded to furnish ample supplies of water to public baths and wash-houses, that may be established for the use of the poorer classes.

21st. That for increasing the protection of property from fire, in all cases the supply of water in the mains be not only constant, but also at as high a pressure as circumstances will permit, and that fire plugs be inserted in the mains at short intervals.

22nd. That, subject to proper control, the local administrative body be empowered to raise money for the purchase of property for the purpose of opening thoroughfares, and widening streets, courts, and alleys, so as to improve the ventilation of the densely crowded districts of towns, as well as to increase the general convenience of traffic.

23rd. That courts and alleys be not built of less width than 20 feet, and that they have an opening of not less than 10 feet from the ground upwards at each end, the width of the court being in proportion to the height of the houses.

24th. That such provisions be made general, and that after a limited period the use of cellars as dwellings be prohibited, unless the rooms are of certain dimensions, are provided with a fire-place and window of sufficient size and made to open, and have an open space in front, and the foundations be properly drained.

25th. That the provisions above referred to be made general, and that all new houses be provided with proper necessaries for the accommodation of the inmates.

26th. That measures be adopted for promoting a proper system of ventilation in all edifices for public assemblage and resort, especially those for the education of youth.

27th. That on the complaint of the parish, medical, or other authorized officer, that any house or premises are in such a filthy and unwholesome state as to endanger the health of the public, and an infectious disorder exists therein, the local administrative body have power to require the landlord to cleanse it properly without delay, and in case of his neglect or inability, to do so by its own officers, and recover the expense from the landlord.

28th. That magistrates have power to license and to issue rules to be approved of by the Crown, for the regulation of lodging-houses for the reception of vagrants, trampers, and other such wayfarers.

29th. That the local administrative body have power to appoint, subject to the approval of the Crown, a medical officer properly qualified to inspect and report periodically upon the sanatory condition of the town or district, to ascertain the true causes of disease and death, more especially of epidemics increasing the rates of mortality, and the circumstances which originate and maintain such diseases, and injuriously affect the public health of such town or populous district.

30th. That for the purpose of aiding the establishment of public walks, in addition to the legal facilities adverted to, the local administrative body be empowered to raise the necessary funds for the management and care of the walks when established.

PERSPECTIVE VIEW OF CHRIST CHURCH, ST. GILES'S.

CHRIST CHURCH, ENDELL-STREET, ST. GILES'S.

This church is built in the new street, leading from Long Acre to Broad-street, High Holborn, now in progress under her Majesty's Commissioners of Woods, authorized by certain Acts of Parliament for the improvement of the metropolis. The opening was very much wanted, and an improvement it unquestionably will be, but half its value is destroyed by the imperfect character of the plan adopted. As originally proposed, the new street would have been commenced exactly opposite to Bow-street, and would have been *altogether* a new street as far as Belton-street. In order, however, to save a comparatively trifling immediate outlay, an existing street to the west of Bow-street (Hanover-street), was made use of, and the line rendered crooked, so that every vehicle coming from the north to the theatres, the market, or elsewhere, will have to turn a sharp corner to get into Bow-street. Moreover the street itself will never be a good one, for however handsomely the houses on the new side may be built, the general appearance will be destroyed by the old side left standing. There can be no doubt that it is better economy in the end to form an entirely new street than to widen an old one, as in the first case a double frontage of greatly increased value may be obtained, while in the other, the value of the one new frontage is kept down by the character of the houses which are left.

This was forcibly urged by the *Westminster Review*, and by the Metropolitan Improvement Society, before Endell-street (as it is now called), was commenced, but ineffectually; the result, it is already clear, will shew the correctness of their anticipations.

The ground on which the building stands, is of very contracted dimensions, and the church commissioners having stipulated that it should contain 1,000 sittings, every inch was required in order to get the necessary accommodation. Further, on two sides little or no light could be obtained, as the east end abuts against the workhouse, and the south side is to form the party-wall between the church and the new houses, so that the architect had many difficulties to contend with.

In order to obtain light, the building has been carried up very high so as to get a lofty clerestory with a series of unobstructed windows; and by the aid of a small well-hole or area, taken from the workhouse, some partial light has been obtained for the east window. The wedge-like shape of the ground regulated the position of the tower and spire, at the north-west angle.

As may be seen in the engraving, the building is designed in the early English style (the style of the 13th century), and is faced externally with Kentish rag, and Bath stone dressings. The principal features of the west front are the five lancet-headed windows seen in the engraving, ornamented with dog-tooth mouldings. In the gable above them is a triangular window, and below them is the principal doorway, recessed and ornamented. There is another entrance on the north side of the tower. The height of the building as compared with its length is very observable

externally, and gives it a continental character.

Inside, aisles are formed in the nave by columns and arches, and in the chancel by open wainscot screens. The columns of the nave are built of blue lias, from Glastonbury, in Somersetshire, which is a tolerable substitute for Petworth marble, and was often so used in ancient buildings. There is a gallery in each aisle, which injures the appearance of the interior, but under the circumstances was unavoidable. They are supported on iron columns behind the blue lias columns, and have an open front. The roofing is open, and is stained to represent oak. So also are the seats, which, being *all free*, have no doors. In this particular, that none of the seats are appropriated, Christ Church stands alone in the metropolis. The old and infirm occupants of the workhouse are specially cared for, and are enabled by means of a communication with their wards on the south side of the east end of the church, to attend service without going into the air.

The chancel is paved with encaustic tiles, presented by Messrs. Copeland and Garrett, and some of the windows are filled with stained glass; that in the east window, a triplet, was an offering to the church made by Messrs. Hudson, pupils of Mr. Dyce. In the chancel aisles there are some small obituary windows of stained glass, executed by Mr. Willement, and presented by him, Captain Hardy, and others, to the church. One on the north side is inscribed "To the memory of Ellen, daughter of Benjamin Ferrey and Annie, his wife. She departed on the 22nd day of June, A.D. 1841, aged twelve months." Mr. Ferrey was the architect under whose directions the church was built, and deserves much praise for the ability displayed.* The width of the church within the walls is 50 feet, the whole length 64 feet 6 inches. The width of the nave is 22 feet 6 inches, and the height, to the apex of the roof, 52 feet 6 inches. The height of the spire is 120 feet.

The site cost 1,250*l*. The whole expense of the building, inclusive of every charge, will be under 4,800*l*. Mr. Winsland was the builder.

The church was erected by Her Majesty's Church Commissioners, aided by grants from the Metropolis Churches Fund, the Incorporated Society, and private subscriptions. A small fund has been raised for the endowment, and the rector of St. Giles's, the Rev. James Endell Tyler, in whom the presentation is vested, has nominated the chaplain of St. Giles's workhouse to be the first minister. An additional amount is required, and the excellent rector, by whose exertions chiefly the church has been obtained, has issued an appeal, which we gladly insert:—

"The munificence of the church societies, and the bounty of individual benefactors, have enabled us to provide a church of stone, capable of containing one thousand persons. The whole church being free, and there being, consequently, no income from pew-rents, our chief anxiety now, is to realize an endowment sufficient to secure for ever the daily performance of Divine worship, and for this object subscriptions are still earnestly solicited. Whilst, however, we have good hope that under God's blessing adequate means will be supplied by Christian benevolence, we unfeignedly desire not to lay an additional burthen on those who have with such unsparing liberality already assisted in this work and labour of love."

* Mr. Ferrey was a pupil of the late Augustus Pugin, and has executed numerous creditable works; one of which, the Dorset County Hospital, is mentioned elsewhere in the present number of the journal.

GOTHIC ORNAMENTS FROM THE CATHEDRAL CHURCH OF YORK.

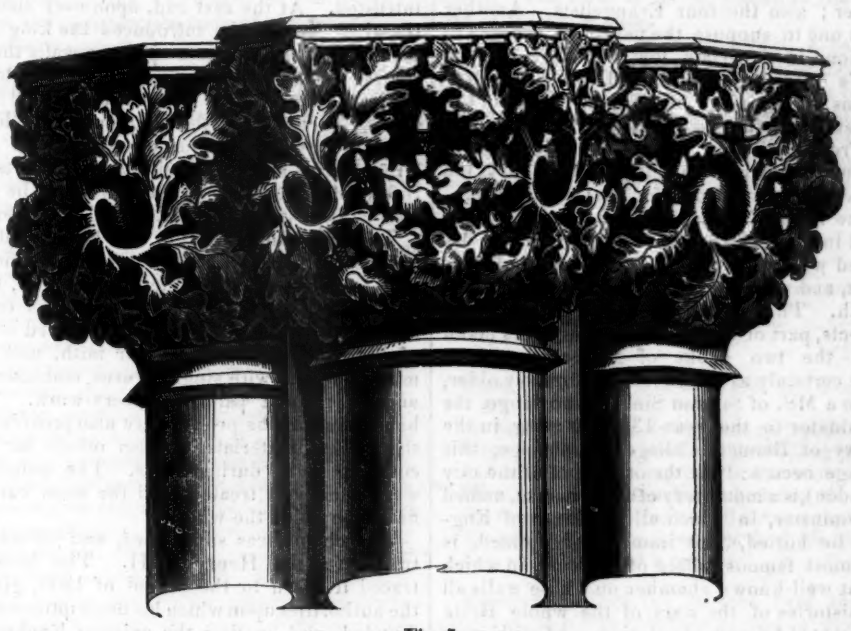

Fig. 5.

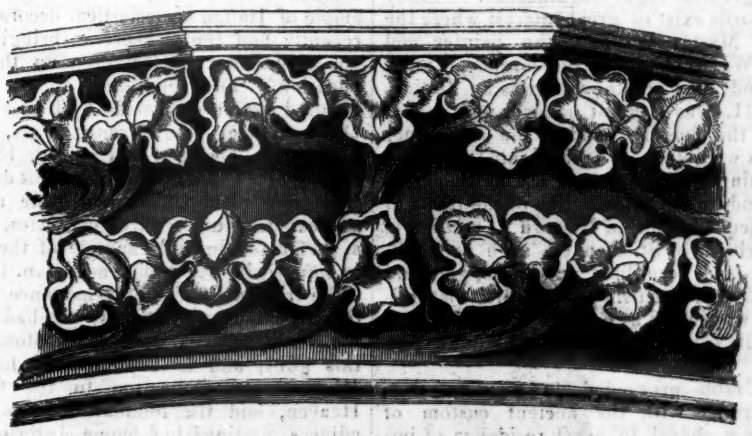

Fig. 6.

In continuation of the series of details from this noble building, commenced on page 90 of the present volume, we here give two from the nave and aisles, commenced, as before mentioned, in the year 1291, and completed about 1330.

Fig. 5 represents the capital of one of the semi-pillars attached to the wall in the south aisle of the nave. It is 1 foot 2 inches in height, and 26 feet from the floor. It is composed of three cylinders with a flat surface between them; the centre cylinder is 9 inches in diameter, the others 6 inches in diameter. From these pillars spring the groins of the vaulting by which the aisles are covered. The foliage is sharply cut, and is very beautiful.

Fig. 6 represents the foliage in the capital of one of the pillars in the nave. All these capitals are different, and display great luxuriance of fancy. The aisles of the nave in this building are very lofty and magnificent, perhaps more so than those of any other of our cathedrals. The windows are in three lights with quatre-foils in the arched heads, and the wall below them is adorned with paneling, which displays crocketted gables and pinnacles in great profusion. The whole of this part of the minster, namely, the nave and aisles, belongs to the decorated period of Pointed architecture, but being an early example, some of the ornaments have much of the character of the previous style.

THE INTERIOR DECORATIONS OF ST. STEPHEN'S, WESTMINSTER.

On Wednesday, the 26th ult., a paper was read by Mr. Crabb, before the Decorative Art Society, upon the "Interior decorations of the collegiate chapel of St. Stephen, as finished by Edward III., in his palace of Westminster, A.D. 1348."

The paper was interesting, the information it contained being unpublished, and derived from Mr. Crabb's acquaintance with the original painting, and with Adam Lee, Esq., who for twenty-five years was the officer in trust of the buildings that had formed the ancient palace of Westminster. In 1800 the act of union rendered it necessary to provide accommodation for the Irish members, and in taking down the wainscotting, it was discovered that the walls of the House of Commons were covered with paintings and gilding; copies of those at the east end were taken, and published by Mr. Smith in 1807, as also by the Antiquarian Society. Extensive subsequent discoveries were made, and the hon. speakers, Lords Sidmouth, Colchester, and Canterbury, gave every facility and encouragement to Mr. Lee, who eventually obtained sufficient information to make out the original plan of the painted decorations which had adorned the chapel, and to restore them in a miniature series of most interesting water-colour drawings.

Mr. Crabb then noticed the localities of the ancient palace of Westminster, describing the decorations of various apartments, particularly the *Chamber of the Holy Cross*, built by

Henry III., and adorned with historical paintings, which continued to be used as a council room down to the age of Queen Elizabeth; also many precepts of this king. In one he directs "That a list or border shall be made well painted," with images of our Lord and angels with incense pots scattered over the border; also the four Evangelists. Another leads one to suppose the paintings, ordered to be done in a certain low chamber in the king's garden, were intended to be representations of the siege of Antioch, taken by the Christians in the first crusade, 1098, as a book in French on that subject is ordered by a former mandate to be delivered to Henry, the keeper of the wardrobe, for the Queen's use.

The *Painted Chamber, St. Edward's*, was of great interest, the ceiling flat and curiously designed with scroll-work and the heads of prophets, and the seraphim with seven wings from Isaiah. The walls had been painted with subjects, part of which were battle-pieces taken from the two books of Maccabees; these were certainly as old as 1322, probably older, for in a MS. of Simson Simson and Hugo, the illuminator in the year 1322, existing in the library of Bennett College, Cambridge, this passage occurs: "At the other end of the city (London), is a monastery of black monks, named Westminster, in which all the kings of England lie buried, and immediately joined, is that most famous palace of the king, in which is that well-known chamber on whose walls all the histories of the wars of the whole Bible are painted beyond description, and with most complete and perfect inscriptions in French, to the great admiration of all beholders, and with the greatest regal magnificence." Many other records exist of great interest where the name of Master William, the painter and monk of Westminster and of Florence, is mentioned, and thus we know he was an Italian. Henry III. was a great admirer and encourager of the fine arts, and by the Exchequer mandates we obtain an insight into the nature of the painted decorations in use at this early period, and by the examination of the items in the Exchequer Rolls of Edward I., relative to the first chapel of St. Stephen, such as white lead, red-lead, vermilion, and azure, gold and silver *oils* and varnishes, we learn that oil-painting was in use as early as 1292, 150 years prior to its supposed invention by John Van Eyck.

Mr. Crabb proceeded to mention that, in conformity with the ancient custom of attaching a chapel to every residence of importance, the first chapel for the use of the palace of Westminster was founded by King Stephen, A.D. 1150. And upon King Edward III. and his Queen Philippa's return from their conquests in France, they determined to rebuild the chapel with the utmost magnificence, in a style that should surpass whatever had been previously attempted in any land. The *principle of design* upon which the arrangement and decorations of the chapel were made was explained, with observations upon the richness of dress at the period, and the interest attached to these peculiarly illuminated edifices raised by our ancestors at a time when the arts, struggling for existence, yet appear to have held no inconsiderable power over the warlike taste of the period. Bearing in mind this feeling for magnificent effect, we can entertain with comparative ease the accompanying desire for its extension to their buildings and to their architectural embellishments, by an assimilating sumptuousness of style in coloured decorations, and much more easily understand the plan of the *design* adopted by our munificent Edward for his chapel royal, produced on the principle that no work of beauty should be "*void of signification.*" The architectural design would thus be formed in conjunction with the sculptured and pictorial embellishments. The chapel consisted of a nave without aisles, the roof rising to a very high pitch; the five windows on each side were remarkably enlarged by deep splayings, thus a strikingly peculiar effect was obtained. The piers narrowed, richly painted, and relieved by gray purbeck marble shafts embellished with thousands of gilt pateræ, continued one successive varied, but unbroken, effect of magnificence along the whole side, again carried upwards by the coloured and gilded cornice, and timber roof. In the piers it was purposed to place the statues of our kings from the Norman Conquest down to Edward III. Upon the walls, under a superb canopy of open tracery and slender clustered columns, were painted figures of angels, each bearing a mantle emblazoned and of different colours, being the armorial bearings of noble contributors, and the holy knights to whose honourable keeping the edifice was particularly intrusted. At the east end, upon each side of the altar, were to be introduced the king and his family kneeling; and upon the walls themselves, together with the windows, were to be depicted the history of the Bible, all the leading events from the Creation to the death of the Apostles. The quarterings of the French arms and the English lions were to be freely introduced, as also the fleur-de-lis and French lily, as marks of Edward's supremacy.

Thus the general notion will be understood as one to create an apartment of magnificent size, to adorn it with a picturesque roof, rich architecture elaborately sculptured, and to fill the walls and windows with a connected series of historical paintings of our faith, and the minor portions with single figures, emblazonry, and gilded and painted tracery-work. The habiliments of the priests were also provided of the richest materials, as also others for the court to wear during mass. The paintings were peculiarly treated, and the most careful finish pervaded the whole.

The chapel was suppressed, and its wealth transferred by Henry VIII. The lecturer traced it down to the period of 1800, giving the authorities upon which his descriptions were founded, and quoting the existing Exchequer Rolls relating to its first erection and subsequent repairs by different kings. And he concluded by saying, "That magnificent example of Italian ecclesiastical decorative art I recently had the pleasure of bringing before you should not be forgotten on the present occasion. The rebuilding of St. Stephen's resulted from a vow made by Edward and his Queen during the French wars, and was finished in eighteen years, A.D. 1348. The *Certosa of Pavia*, whose sumptuous decorations were continued with equal taste and spirit and expense during three centuries, and form a perfect chain and example of the fine arts in Lombardy, was commenced A.D. 1396; and arose from the fruits of repentance in one of the noble house of Visconti, who had murdered his uncle and his family. In atonement for this guilt, and in expiation of his crimes, Visconti, in dedication to the Queen of Heaven, laid the foundation of a mass of edifices, destined to become a glorious monument of perfection in every branch of the fine arts. Those who are disposed to pursue for themselves the gratifying inquiries which my limited leisure only allows me to hint at, will discover the close connection of the fundamental principles of design exhibited in each building for its peculiar purpose. The chapel of St. Stephen, intended for a sumptuous temple fit for princes to worship in, was a single space uninterrupted by pillars, of rich and elegant Gothic architecture, every ingenuity being used to increase richness by the aid of an unusual breadth of light gilding and colour. Its roof, pavement, walls, and windows combined in solemn history with the richest habiliments to produce an apartment suitable for the chapel of a royal palace, and justly rendered it the most magnificent the arts of the era could produce.

The church of the Certosa was later. Art was then advancing with giant strides towards the creation of names, yet continuing to shed an undiminished lustre over the country. This building was for a different purpose. The interior, with all its profusion of rich expenditure, was to prepossess the spectator with solemn grandeur, its massive columns, widespread arches, subdued light, quietly illuminating the lengthy vista of marble walls, and rendering dimly visible the sparkling of gilded stars, from its deep azure-coloured vaults, all tending, as a portion of the design, to produce the impression of indefinite space. Grandeur and rich harmony which tends, through the power of effect, to soothe those turbulent and stormy passions of man's mind, which yields to the subduing tones of music and of colour, were produced.

It may not be exactly within my province to notice, but there does appear something greatly to be admired in the idea, of a temple of worship exhibiting the perfect production of every ingenious art which the bounty of the Creator has pleased to bestow upon man. A religion thus exhibiting in its churches a combination of studied magnificent effects as a whole, and an endless application of the highest excellences in the details, must be allowed to speak an intelligent language plainly indicative to the general people of that perfection required in the worshipper. Let no labour or expense be thought too great which will contribute to the honour and embellishment of the House of Prayer, was the precept of those men whose works we have this evening been considering."

On Wednesday next (the 12th), a paper on the Interior Decorations of the Royal Exchange will be read.

INSTITUTION OF CIVIL ENGINEERS.

FEB. 25.—The President, Sir John Rennie, in the chair.

The paper by Mr. P. W. Barlow "On the comparative advantages of the Atmospheric system of propulsion on Railways," was the result of an examination of the system, with a view of determining as to the propriety of adopting it on the Tunbridge Wells branch of the South-eastern Railway.

The author first examined the comparative advantages of the atmospheric system over that of traction by a rope, and then he stated the reason for supposing it to be inferior to the locomotive system. He premised that on lines similar to the Greenwich and Blackwall, where the traffic was nearly uniform, and at short intervals, the power used admitted of mathematical computation; but that on railways generally, the power required must be irregular, both as to the amount required and the duration of its employment, and that therefore a power which was restricted to carrying between certain given points only and certain intervals, would lead to great inconvenience in practice. It would be inconvenient also to have a power which could not be employed for the ordinary repairs of the road, ballasting, removing slips, conveying building materials, working the coal and lime traffic at sidings, moving goods, trucks, carriages, &c. at the stations, all of which was done at present by the locomotives with a great saving of time, and of the expense of men and horses. If locomotives were employed for these purposes only, it must be at a great expense, as the keeping up a small locomotive establishment was very costly, and, moreover, the gradients and curves of the line must be adapted for working locomotives, and thus do away with one of the great arguments in favour of the atmospheric system.

It was contended that the subsidence of embankments, which at present constantly occurs without interrupting the usual traffic or being perceived by the passengers, would suffice to rupture the air-pipe, or strain it in such a manner that the valve would not close, and thus cause a stoppage of the line. Many other and similar practical objections were stated against the system, but the main point was in the comparative cost of haulage when examined with stationary and with the locomotive engines. With the former it was contended that on lines with unfrequent trains the small portion of time the power was actually employed and the number of hours for which the steam must be kept up in order to be always ready, would be so disproportionate as to make the stationary engine system far more expensive than locomotive power. The lines with very steep gradients were of course excluded from this position. It was considered also that with the atmospheric system, steep gradients increased the expense of power in the same ratio, as the power must always be exerted in whatever way it was applied.

Several experiments were then given to shew the great expense of fuel per ton of goods on the Atmospheric Railway; the results were decidedly in favour of the locomotive. The cost of construction was then examined, and it appeared, that referring to the calculation of the cost of working the London and Birmingham line, to lay down the atmospheric apparatus of a double line with a pipe of the required area would not be less than 10,000*l.* per mile or a total cost of 1,120,000*l.* the interest of which sum at 5 per cent. would be 56,000*l.*, or 500*l.* per mile, which sum nearly equalled the average cost of working the line by locomotives, and was greater than on many lines.

In fact, that a contract might be entered into for working a line by locomotive power for the interest of the sum which would be expended in the establishment of an atmospheric apparatus.

The general results deduced were in accordance with these observations, and it was assumed that the atmospheric system could be most advantageously adopted on short lines, with frequent traffic near large towns, where the absence of noise was important; and that railways on steep inclines in one direction, as at Dalkey, was most favourable to the system.

In the discussion which ensued it was contended that many of the objections urged by Mr. Barlow were not well founded, and that many of the practical difficulties he had advanced had been overcome by the mechanical arrangements now in progress of execution on the more extensive lines which were destined to be worked on the atmospheric system. That both sidings and level crossings were practicable; by a very simple contrivance, a self-acting platform could be so arranged as not only to guarantee the pipe from any injury by the traversing of a cart across the line, but that, by the action of the vacuum in the main, a barrier could be raised on the passing of a train which would effectually prevent the traversing of any vehicle, and thus avoid the possibility of accidents. That instead of the assumed liability to be thrown off the rails, it was shewn, that the leading carriage being tied down to the piston, greater security was attained, and that on one occasion the leading carriage on the Dalkey line had started before its time, and had actually traversed the distance at a speed of nearly seventy miles per hour, going round curves 130 to 180 yards radius. That the power stated to have been expended in the conveyance of a given gross load was assumed at too high a ratio, and the fuel also, and that as to the question of cost by haulage, by the adoption of small steam power, worked only for pumping water, to be used only at the time of forming the vacuum for unfrequent or for light trains, a system of propulsion might be established which would be more economical than that by locomotives under the best management.

THE ARCHIMEDIAN SCREW APPLIED TO RAILWAYS.

A PATENT for this purpose has been granted to Mr. Isaac Farrell, of Dublin, which, if satisfactorily established, will lead to the most important results. The following description is extracted from a letter addressed by the patentee to Mr. Purcell, chairman of the Great Southern and Western Railway:—

"The invention consists simply in a screw, called the screw propeller, laid down continuously in the middle of the track, fixed in the direction of its length and turned under its axis, by steam or other power, communicated to it at proper intervals, say every three miles along the line. This screw may be of any given diameter, say from 18 to 24 inches, formed in lengths of from 12 to 15 feet each, and consists of a shaft of cast or rolled iron-tubing 4 inches in diameter, supporting, by means of wrought-iron arms keyed on the shaft, a rolled-iron spiral, which is bolted to the ends of the arms.

"The power is communicated to the screw by means of spur-wheels, turning a pinion fixed on one end of each line of shafting, of one and a half mile in length; it is situated so as to drive two such lines, that is, one in each direction from it, and the gearing is so contrived as gradually to bring the screw propeller into motion, and also to transfer the power from one line to the other without stopping the train. The motion of the screw-propeller is communicated to the trains by means of a pair of wheels or rollers, so attached to the framework of the leading carriage of the train, as to bear upon the rim or spiral rail that forms the thread of the screw, and thus carries on the train forward; the other acts as a check-wheel, and prevents the train from moving with an unequal motion, or running forward by acquiring acceleration.

"The screw propeller is capable of acting in both directions; and, on the motion being reversed, that which before acted as a check-wheel becomes the propelling wheel, and *vice versâ*. These wheels, which form the only connection between the trains and the propeller, are perfectly under the control of the conductor, who, by turning the handle of the vertical screw, can press the wheels when he sees it necessary with more power upon the screw propeller, or in a moment disengage them from it; and, having done so, can instantly apply the break to the bearing wheels, by continuing the movement of the vertical screw and thus stop the train at any point without interfering with the motion of the propeller.

"The advantages proposed to be derived from this invention are—economy in the construction of railways, from the facility it affords for ascending inclined planes of almost any angle, and the consequent reduction in cuttings, embankments, bridges, &c.; also in the use of light rails instead of the heavy rails required for the locomotive system; also, in the use of lighter carriages than those at present in use, and hence less useless load; economy of power for locomotion by the use of fixed engines, or water power in the place of locomotive-engines, and the consequent avoidance of the expense of erection and support of those costly establishments required for the latter. Injury to passengers, by collision or the running of the trains off the rails, being rendered impossible.

"One of the greatest advantages this system possesses over any other is the facility it affords for transmitting a succession of trains at very short intervals. Provision may thus be made for the most extensive traffic without increasing the engine-power: for instance,—a train, capable of carrying 50 tons on the present system, could be divided into four trains of five or six carriages each, at ten minute intervals, an arrangement by which 12,960 passengers might be conveyed in a day of twelve hours, and the expense of locomotion not exceed six shillings per day."

WORKS IN THE PROVINCES.

AT Cromer, in Norfolk, it is in contemplation to erect a new jetty, or breakwater, and sea walls for the purpose of protecting the town from the further encroachments of the sea. It is also proposed to erect other works and defences on the beach and cliff, with convenient promenades. Application has already been made to Parliament for leave to bring in a bill to this effect.

The Secretary-at-War has decided upon the erection of five experimental military prisons, to which superintendents, selected from the half-pay list, are to be immediately appointed, at a salary, in the majority of cases, of 200*l.* per annum.

Lord Middleton purposes expending 15,000*l.* upon improving the town in the county Cork, from which he derives his title.

At Canterbury the labours of the workmen employed in the restoration of the ancient church of St. Martin are nearly concluded. The new pewing is completed, the whole of which is of foreign oak, and in character with the antiquity of the building itself, which is said to be the oldest ecclesiastical structure in this kingdom. Little of the ancient part however remains.

In Cumberland it has at length been determined that the memorial to the late Earl of Lonsdale shall consist of a statue in marble. Whether it is to be an in-door or out-door statue, and the site, are left for further consideration, to be determined upon by a committee specially appointed for those purposes.

At Camarthen a preliminary meeting was held last week, having for its object the erection of a monument to General Nott, the hero of Ghuznee and Candahar. A committee was formed, and a subscription opened, to which Lord Ellenborough has contributed 100*l.*

At Rugby a monument has just been erected to the memory of the Rev. Dr. Arnold. It was executed by Mr. John Thomas, in Caen stone; the figure is recumbent, under a rich Gothic canopy, and has given so much satisfaction to the committee, that they have rewarded the artist with 100*l.* beyond the sum agreed upon.

In York Minster, a monument is about to be erected to the memory of the late Dr. Beckwith. It is to consist of a high tomb of the decorated period surrounded by pinnacled buttresses, between each of which are to be ogee arched panels with crockets and finials; in each panel will be inscribed the name of one of the charities which the doctor aided by his benevolence. The cover of the tomb will be of black marble, having on a splay the inscription in incised brass. On the tomb will repose a whole-length effigy of Dr. Beckwith, the size of life, in white marble. The head will be a faithful likeness, the sculptor, to whom the work has been committed, J. B. Leyland, having had the advantage of carving and modelling the bust previous to the doctor's death. The tomb is to be placed in the east end of the south aisle.

In the cemetery at Nottingham, a monument has just been erected to the memory of Robert Millhouse, the poet. It is about 6 feet high. Over the surbase is a tablet, containing the following inscription from the pen of Mr. Spencer Hall, who was the intimate friend of poor Millhouse. It is creditable both to the head and heart of the writer.

IN MEMORY OF
ROBERT MILLHOUSE,
AUTHOR OF THE DESTINIES OF MAN,
SHERWOOD FOREST, THE SONG OF THE PATRIOT,
BLOSSOMS, AND OTHER POEMS,
WHO DIED AT NOTTINGHAM,
APRIL 13TH, 1839,
AGED 50 YEARS.

"When Trent shall flow no more, and blossoms fail
On Sherwood plains, to scent the springtide gale;
When the lark's lay shall lack its thrilling charm,
And song forget the patriot's soul to warm;
When love o'er human hearts hath lost all sway,
His fame may pass—but not till then—away:
For nature taught, and freedom fired his rhyme,
And virtue dedicated it to time."

Emblematical of the subject, over the inscription, is a lyre entwined within a wreath; the whole is surmounted with an elegant cross fleury. The work was committed to the charge of Mr. Widdison, sculptor, of Edwinstowe.

Thorwaldsen's celebrated statue of Lord Byron, which was originally intended for Westminster Abbey, is about to be placed in the library of Trinity College, Cambridge. The poet was a member of this distinguished body, having graduated M.A. (hon.) 1808.

At Pembroke Dock, a new church is about to be erected. As Government own a good deal of house property in the town, they have considerately granted 500*l.* towards the building.

In the Potteries, a district church for Fosbrook and Blythe Marsh is being built. The Queen Dowager has recently presented a donation of 20*l.* towards the building fund.

JURISDICTION OF OFFICIAL REFEREES —PARTY-WALLS.

SIR,—Before addressing myself to the task of explaining the painful position in which I am placed with the official referees, I will state the case that has induced the discussion. The trustees of a chapel hold a vestry-room on the ground-floor, in the rear of, and over which, are rooms belonging to the owner of the adjoining property, consequently coming under the denomination of "intermixed buildings." This chapel was rebuilt in a most substantial manner in 1817, having an 18-inch wall against the adjoining premises, now perfectly sound, and in thorough repair. The owner of the adjoining property being desirous of pulling down his erections for the purpose of putting up other buildings, applied to the referees, who issued their authority to serve notices both by the "building owner" and the district surveyor, appointing a day for meeting on the premises.

Two distinct notices were served—one as to the party-arch between the intermixed rooms, the other as to the above-mentioned wall; in respect of which wall a tenable objection might be taken, that it is an external wall, inasmuch as it was built entirely on our ground, and not being within the operation of the former Act of Parliament, the common law of the land would preserve our right to it. But as, with the exception of the preservation of ancient lights, no objection would have been raised to the "adjoining owner" using the wall, we will assume, for the purpose of raising the argument, that it was a "sound party wall" (presently, also, contending that it is a "sufficient one"). I attended the meeting on the part of the trustees of the chapel, protesting against the survey; the building-owner was attended by his surveyor, who, I presume from the statements I made, declined to take any part in the matter; and whatever the opinion of the district surveyor may have been from

our discussion, he stated he had no alternative but to proceed in obedience to the directions of the official referees, and consequently proceeded alone in his survey.

I then took the liberty of addressing the referees, assuming they were an appellant court for the public as for the district surveyors. Setting out the particulars of the case, and the points of objection, I thus reasoned—"If the public are entitled to hope for a declaration of your opinion upon such points as controlling future practice, this point, it appears to me, is one of considerable importance. My reading of the intention of the legislature would be, that in all cases of intermixed property, questions relating to taking down and rebuilding party-walls, or any matter where two adjoining owners were mutually interested, that it is competent to them to assent to the principle involved as applicable to their case; and that it would then become the duty of the district surveyor, in respect of the fee prescribed to be paid for his superintending the work, to advise the parties (if doubt arose) as to what was required, in conformity with the provisions of the Act, and not to drive parties to an expensive mode of proceeding, frequently to result in irritation. The portion of sect. 34 to which I refer is, "That if a party-wall or party-arch cannot be built without pulling down such buildings, and so laying parts thereof to each other; and if in *default* of the *consent* of all proper parties, the official referees, &c."

After having made this communication without having sufficiently looked into the matter, and finding that I had confined my objections to their authority more exclusively as to intermixed property, I took occasion on the following day again to address them, extracts from which, and copies of the letters to the "building owner" and district surveyor, will perhaps best tend to explain my views. I would here remark that the wall is a sufficient and sound one. Even in such cases the "building owner" may take down such a wall, under form of notice, No. 14, which is headed "Notice to be given (three months before commencing operations) by an owner to an adjoining owner, where no survey is required," which survey is dispensed with in consequence of the liability of the "building owner" by sec. 26 "to reinstate and make good all the internal finishings and decorations of the adjoining premises;" my ground of complaint, therefore, is that in each case the proceedings are *ab initio* wrong, as a costly mode of proceeding.:—

(*Extracts from Second Letter to Official Referees.*)

"Since taking the liberty of addressing you yesterday, I have met Mr. ——, who proceeded with his survey, the surveyors on either side taking no part. My grounds of objection have been further strengthened by closer attention to the subject; and as I am satisfied it is not your desire to overstep the powers intrusted to you, I would draw attention to my further reasons for the opinion yesterday expressed, that parties might assent by private arrangement. I now hold that any proceedings taken in moving your office or calling in the district surveyors is, as a primary step, illegal (I use not the term offensively, but merely as being repugnant to the express provisions of the Act).

"My ground of complaint, as expressed in a letter to Mr. ——, is, that as in the case of party-walls, each section is read as complete and conferring authority *per se*, whereas I read them as contexts to sec. 20, which first declares the various points treated of in the subsequent sections, and after setting them all out, and describing the characters or denominations of the respective parties, says, 'that if the adjoining owner shall have consented thereto, or if without such consent,' which is a looser term, fully, however, strengthened a few lines further by these words—'and subject to the provision for supplying the want of consent of the owners.' It is perfectly unnecessary to repeat these words in the subsequent sections, as such sections can only come into operation in default of such consent; and sec. 24 provides for 'supplying want of consent of adjoining owners,' necessarily implying the necessity of first seeking this consent.

"I am aware that you may in rejoinder say, every person is bound to know an Act of Parliament, and to read for himself; but I feel equally satisfied that you would desire to render a complicated Act as intelligible as possible, through the medium of the large and novel powers intrusted to you."

(*Copy of Letter to District Surveyor.*)

"Dear Sir,—Since meeting you this morning, I have given the subject somewhat more consideration, and understanding that you have paid much attention to the subject, I can only express my surprise how plain language can possibly be so misinterpreted. I have again written to the official referees, stating, in my opinion, that they, or the district surveyor moving in the matter, is thoroughly illegal with respect to any matter until difference shall have arisen.

"The mistake you have all fallen into, is reading a section *per se*, and imagining what was there directed primarily clothed you with authority. In the case of party-walls, all the sections subsequent are merely contexts of the declaratory section 20, and it would be a monstrous proposition that every party should be called upon to move the office of the referees, and through them the district surveyors. I hold that neither the one nor the other have any jurisdiction until differences arise, and further that it is the duty of the 'building owner' to endeavour to obtain the 'consent' of the 'adjoining owner,' and this obtained, it is the duty of the district surveyor in respect of his prescribed fee, to direct the operation in accordance with the Act.

"I trust I shall, as has always been my habit, treat my professional brethren with courtesy, and pay obedience to a recognized law; but I shall oppose every attempt at undue coercion under this obnoxious Act; and you must perceive that in any, the most trifling matter, the course prescribed would imply large costs."

(*Copy of Letter to the Building Owner.*)

"Sir,—A notice from you, accompanied by one from Mr. ——, the district surveyor, having been put into my hands, respecting property of yours intermixed with that belonging to the trustees of —— Chapel, I have sent a statement of the facts to the official referees, as it appears to me the notices have been served prematurely; inasmuch as sec. 34 states that such proceedings are to be taken only 'in default of the consent of all proper parties.' We have received no communication upon the subject; had we so received it, we should have been, and are prepared to consent to carry out the operation in conformity with the Act.

"Understanding you are about to erect some houses on the ground, it appears to me desirable for both parties to come to some arrangement that would obviate the present inconvenience of the admixture of property; and I am prepared to make a proposition that appears to me to be mutually beneficial, if you will favour me by making an appointment, or refer me to your surveyor."

I afterwards received a communication from the registrar, appointing a day for hearing the matter.

This conference I shall, of course, decline. It would be but an appeal from Cæsar to Cæsar, having yet to learn that the referees are clothed with powers that will close a court of law against an appeal, that the proceedings are *ab initio* repugnant to the express provisions of the Act. Were such a principle admitted, the triumvirate of Somerset-house or that of the official referees and registrar of Trafalgar-square, would hold a power beyond the jurisdiction of our judges in equity; no party being entitled to issue process from their courts, unless he has conformed to principles prescribed by enactment or precedent.

I am quite aware that it may be said the "building owner" moves the office of the referees at his own peril; but it would appear the more convenient course, that he should be required in his application to state what steps he had taken, and that in addition to the questions already put by the official referees, the one I have suggested to them should be added viz.: if the consent of the adjoining owner had been sought? and that in default of that, no such proceedings should be taken.

I regret to say there are many other points of difficulty, some of which the district surveyors declare themselves unable to solve. I would suggest the importance of the subject appears to demand, that a public meeting be held, to address the House by petition at this early period of its sitting.

GREENWAY ROBINS.

New Books.

Lectures on Natural Philosophy and the Mechanical Arts. By THOMAS YOUNG, M.D. *A new Edition with references*, by the REV. P. KELLAND, M.A. Taylor and Walton. London. 1845. Parts I. and II.

DR. YOUNG'S lectures, delivered in the theatre of the Royal Institution, are too well known to need commendation. The edition, of which part is now before us, will be published in eight or nine monthly parts; all the plates belonging to the original work will be given, and the text reprinted entire, with copious references to recent treatises on the subjects, and notes on such discoveries as may have been made since the lectures were first published. We shall recur to the work when further advanced.

Correspondence.

MISTAKES IN ESTIMATES—HERNE-HILL CHURCH.

SIR,—In your publication for January 25th, you did me the favour to insert a letter of mine relating to the contract I entered into for the mason's works of the new church at Herne-hill. In that letter I complained that the quantities I had to work by were considerably more than those which were supplied for the purpose of enabling me to make my calculations by, so much so indeed, that the difference in one item amounted to upwards of 1,000 feet of stone, to which may be added the labour bestowed upon it. In a note which you appended to my letter, you state that my remedy is against the party who took out the quantities; and in your number, February 1st, page 59, is a letter from Mr. Bloomfield, who states that Mr. Alexander, the architect himself, took out the quantities, and that he, Mr. B., only made copies of them for the several parties desirous of sending in tenders. Since the appearance of this letter, I have been weekly expecting to see in your pages some explanation from Mr. Alexander, but in this expectation I and many others, who feel deeply interested in the question on public grounds, have been disappointed. The omission cannot have arisen from his ignorance of the correspondence, for I by chance know that his attention was lately at Herne-hill specially directed to it; nor can I suppose that you would refuse insertion to any explanation he might send you. The points I am anxious to elicit are these: whether there were two sets of plans and specifications, namely, one to work by, the other to contract by, or whether alterations were subsequently introduced into the plans, from which the quantities which governed my estimates were taken. The difference I complain of, and which has created so much interest among the great body of master masons in the metropolis, must have resulted either from design or from accident. If from the latter, you will be conferring a boon upon a large class of your readers by assisting to unravel the mystery, for in so doing you will draw attention to the rock on which I split, and thereby warn others; but should it be found to result from design, I trust that you will not be wanting in that bold and unflinching spirit which has hitherto characterized your journal, to expose and denounce such disreputable practices.

I am, Sir, &c.,

Gravel-lane, Southwark, W. SUGDEN.
March 3rd, 1845.

NEW CORN MARKET, ROMFORD.

SIR,—In your last week's publication, there was a notice to a correspondent respecting the new corn market at Romford. I beg to forward you the particulars of my visit to the spot, presuming that you will favour the members of the profession by the insertion, leaving it to their option to avail themselves or not of the advantages presented by the advertisement.

The advertiser is Mr. Harvey George, who

requires a design for a corn market, subscription room, lecture room, and sundry other conveniences, appropriating the present buildings for the purpose, which, by the bye, I find cover a space of 51 feet frontage, by a depth of 168 feet.

To effect this, your readers are aware that it will be essential to take a plan of the premises as they at present exist.

The time required to take this plan, to lay it down on paper from the rough dimensions and sketch, and make a design for the purposes required, would, at least, occupy any one, with the assistance of a clerk, four days, besides the expenses of travelling by railway there and back, twenty-four miles. Thus I calculate that the "fortunate competitor" (rather a negative term, by the bye, under the circumstances) would be a decided loser.

But the chances against this enviable position are more dreadful than at once presents itself, for Mr. George asserts that he has already received 150 designs, and I have no reason, from the authority that I quote, to doubt the truth of his having so stated; except that there must be 149 weaker men in the profession than falls to its average lot, and from the circumstance of his having in a second advertisement postponed the period of receiving the designs for fifteen days, trusted to that weakness, in expecting a few more. When I incurred the first expense of going to Romford, I inferred, although not so stated in the advertisement, that the successful competitor would be chosen as architect, to carry out the work; but there I reckoned without my "advertiser," for I find that Mr. George makes no secret in stating that he has already a design of his own, which he intends to adopt, modified and doubtlessly improved by the kind suggestions of these numerous professional friends. This much information did I glean at the expense of some 10s. ("5 per cent. on the *probable amount*, as we say"); but who formed the committee nobody knew. In vain I asked, as the advertisement suggested, "for full particulars" of Mr. Harvey George, and, as my own instinct prompted, of the builders in the town. The only certain knowledge I could acquire was, that Mr. Harvey George had taken the premises on lease, with the option of purchasing; that he projected the scheme, and advertised it; that he intended himself to build it; and that there appeared to be but one opinion, which was, that he would be his own architect, and, like one who would be his own lawyer, that he was well worthy of being his own client.

I think that the profession deserve this caution, and to vouch for its authenticity I enclose you my name. AN ARCHITECT.

MEASUREMENT OF BRICKWORK IN BARREL DRAINS.

SIR,—Will you be kind enough to inform me through the medium of your journal, how I am accurately to measure the contents of a 12-inch barrel drain,—a friend disputing my method.

In my opinion the outer circumference should be measured thus:—12 inches diameter of drain, half brick on each side = 8 inches; total 20 inches, by three times for circumference, gives 60 inches, or 5 feet of 4 inch brickwork, which say in 100 feet, will give 166 feet 8 inches reduced brickwork.

The other method is, to measure the diameter and one rim, making 16 inches instead of 20, which in 100 feet will give only 133 feet 4 inches, a material difference.—Your kind information will oblige

AN ENQUIRER.

[Our correspondent is wrong; the exterior and interior circumference should be added together, and the half of it taken as the mean. This multiplied by the length and divided by 3 (if the sides are half brick thick), will give the quantity of reduced brickwork. The mean circumference is obtained for practical purposes, by adding the internal diameter to the thickness of *one* rim, and multiplying the result by $3\frac{1}{7}$. Thus 12 inches, the diameter of the drain in question, $\times$ $4\frac{1}{2}$ inches (the rim)= $16\frac{1}{2}$ inches, which being multiplied by $3\frac{1}{7}$ gives 4 feet 4 inches the circumference. This being multiplied by the length, 100 feet, we have 433 feet 4 inches or 144 feet 5 inches reduced. In precise terms, the diameter of a circle is to the circumference as 7 is to 22.—ED.]

MATHEMATICS AS APPLIED TO CARPENTRY.

SIR,—I very much wish an answer to the following:—By what means can I learn to apply Log. cos. cosec., &c., &c., to constructive carpentry, in calculating the several weights required and thrusts produced, to calculate weakness, &c.? If in a work on the same, I shall be glad of the name of it.—I am, Sir, &c.,

A READER.

SHOP-FRONTS UNDER NEW BUILDINGS ACT.

SIR,—Your "Subscriber" is not bound to carry up an "unsightly mass of brickwork" of the same projection as the cornice of his shop-front, or an inch beyond it. The schedule requires merely a pier or corbel of "*incombustible material*." He can, therefore, form in the line of the party-wall a *cement* pilaster, 9 inches wide, with face and cap-mouldings, and cornice, similar to those of the wooden shop-front and story-posts, but *breaking one inch* before them. The pilaster and cornice would be both "pier" and "corbel;" and, especially in a continued range of shops, would be far from "unsightly."

I am, Sir, &c., M. B. A.

Miscellanea.

BRICKS.—A correspondent of the *Mining Journal* remarks, that "should the clay of which bricks are made be contaminated with fragments, however minute, of chalk or limestone, the consequences may be very serious. On transference to the furnace, the carbonate is converted into quicklime, and when the bricks are moistened, they necessarily burst, and crumble to pieces. In the case of bricks used in tunnels, this is of paramount moment, and will explain the destruction of the tunnel of Comptiel, between Belgium and Rhenish Prussia. The fault lay with the brickmaker, not the engineer. I have seen the destruction of an earthenware vessel from this cause, as soon as water was poured into it."

THE DORSET COUNTY HOSPITAL is now drawing towards completion, and, when finished, will be capable of accommodating 300 in-patients. It stands in an open part of the city of Dorchester, near the West-walks, upon ground presented by Robert Williams, Esq., of Bridehead. The north wing of the building has been opened for the reception of patients for some time. This institution is supported by voluntary contribution. When we see the number of patients within its walls, it seems surprising that Dorset should so long have remained deficient of a county hospital. Mr. Benjamin Ferrey is the architect employed.

FALL OF PART OF THE IRON ROOF OF A WAREHOUSE.—Considerable alarm was excited in Salford a short time ago, by the fall of the greatest portion of the roof of one of the buildings of the Manchester Bonding Warehousing Company, Chapel-street, which for many years was used as the cotton warehouse in connection with the mill of Messrs. Philips, Lee, and Co. The gable end of this building fronts Chapel-street. The building is about 120 feet in length and 40 feet wide. The roof was an old cast-iron one, much decayed, and was supported by two ranges of iron columns (the building being fire-proof) dividing the building longitudinally into three bays. These columns were very slight, and from iron cups let into the top of these pillars very light principals of cast-iron were carried at a shallow spring to support the roof, or rather roofs, for it was in three divisions. Several workmen and others were upon the roofing, which was undergoing repairs, when, about twenty minutes before eleven o'clock, the whole of the division next the yard of the premises fell at once with a loud crash, and this, dragging the tie-rods down, dislodged the pillars on one side of the centre bay; about the third of the roof of which next fell, followed by a rather larger proportion of the roof of the other outer bay, so that in all about two-thirds of the roofing fell. Amongst the individuals on the roof was a clerk of Mr. A. Mills, architect, who escaped without injury. Upon further inspection, it has been found that nearly all the cast-iron cups in one range of pillars had been cracked or torn, apparently for a long time, by some severe shock or strain, and one of the principals was also broken.—*Manchester Guardian*.

RAILWAY IN SPAIN.—A railway from Barcelona to Mataro has been decided on, the first Spanish line, and many of the shares are subscribed for. We cordially wish it success, believing that an improvement in the means of communication will greatly aid in consolidating this unfortunate country.

ST. MARY-LE-BONE BANK FOR SAVINGS.—The fifteenth annual general meeting of this institution was held on Thursday, the 27th ult., at the office, in Welbeck-street, Cavendish-square. It appeared from the several reports read to the meeting, that the progress of this bank continues to be of a very favourable description, no less than 2,684 new deposits having been made in the last year. 15,124 deposit accounts remained open on the 20th November last, of which 9,503 held balances averaging less than 4*l*. 5s. 10d. each. Upwards of 350,089*l*. was then invested with the commissioners for the reduction of the National Debt; this amount has since risen to 353,089*l*. 4s. 7d., and is rapidly on the advance. The continued evidence thus afforded of the strong and growing disposition of the working classes to provide against the casualties of life, will prove a source of gratification to all reflecting minds.

THE FOUNTAINS IN TRAFALGAR-SQUARE.—The labour of the mountain has produced a mouse. After the long-heard note of preparation, we looked for something, more than ordinarily beautiful and original, and are therefore annoyed to find that the new fountains are nothing more nor less in design than might have been purchased, dolphins and all, ready-made, at any of the artificial stone shops in the Paddington-road. The beauty of the material, polished red granite, is the saving clause.

FIRES.—The late fire at Captain Duncombe's in Grosvenor-square was another result of the incautious fixing of stoves. It was caused by the overheating of a hot-air stove, which communicated with the flooring of the hall.

NOTICES OF CONTRACTS.

[We are compelled by the interference of the Stamp Office to omit the names of the parties to whom tenders, &c., are to be addressed. For the convenience of our readers, however, they are entered in a book, and may be seen on application at the office of "The Builder," 2, York-street, Covent-garden.]

For completing the Works connected with the enclosing and annexing certain Land lately purchased for the improvement of Newport Bridewell, in the Isle of Wight. March 8.

For repairing the footway pavements, and providing and laying new curb and other stone; for repairing the carriage-way, pavements, and providing and laying new granite and other stone, during one year from Lady-day next, for the united parishes of St. Andrew, Holborn, and St. George-the-Martyr, Middlesex. March 8.

For a supply of from 200 to 300 tons of Rails, and from 100 to 200 tons of Chairs, for the Eastern Counties Railway. March 10.

For building a Sewer in Addle-hill, Doctors-commons. March 11.

For paving and repairing the Carriage-ways and Foot-ways within the parish of St. Paul, Covent-garden. March 11.

For supplying and laying down about 400 yards of cast-iron Pipe, of 10 inches diameter, for the Commissioners of the Southampton Water-works. March 13.

For building a Sewer in the City-road, St. Luke's, near Charles-street, in length about 401 feet; and lowering an existing Sewer, in length about 130 feet. March 14.

For the repairs and restoration of the Tower and Nave of St. Mary's Church, Nottingham. March 17.

For supplying her Majesty's several Dock-yards with Riga Hand Masts and Fir Timber, Dantzic Deck Deals and Fir Timber, and Norway Spars. March 28.

For new-paving such parts of the parish of St. Mary, Islington, and repairing the paved Foot-ways, as may from time to time be required, during one whole year from Lady-day next. March 19.

For the supply of 11,000 feet of nine-inch cast-iron Pipes for a new line of Aqueduct to be laid in the Island of Malta. March 31.

For the supply of 11,000 feet of 9-inch cast-iron Pipes for a new line of Aqueduct in the Island of Malta. April 30.

For new-paving parts of the parish of St. Mary, Islington, Middlesex; and for repairing and keeping in repair the paved Footways belonging thereto, for one year from Lady-day next. Also for supplying unbroken Guernsey Granite, Core, Ballast, Gravel, and clean Flints.

COMPETITIONS.

Plans and Specifications for Covered Ways at the Lunatic Asylum, Melton. March 18.

Plans and Elevations for a new Workhouse with the requisite offices, capable of accommodating 400 inmates, for the Canterbury Incorporation. The architect is requested to state the amount of premium he will require for the use of his plan and specifications in the event of the Court of Guardians adopting the same, and appointing their own surveyor to superintend the works. March 8.

Plans for the most convenient mode of landing or embarking passengers, carriages, &c., &c., at George's Pier-head, Liverpool. A Premium of 200*l.* will be given for the Plan selected and acted upon, and a Premium of 100*l.* will be given for that Plan which may be deemed to be the next in utility. March 19.

APPROACHING SALES OF WOOD, &c.

BY AUCTION.

March 11.—At Enfield: 200 Oak Timber Trees of large dimensions and excellent quality; 34 Elm and 24 Ash Trees; also 45 Oak Trees of large metings.

March 10.—Upon the Benacre Hall Estate: 1,000 Oak Stands, from 5 to 8 inches girth; 140 Ash and Elm Stands; 40 Fir Stands; 10 Ash Timber Trees; also 60 Fir Trees and 12 Poplar Trees.

March 11.—At New Barns Farm, Ely: 330 Ash, Elm, Beech, and Sycamore Timber Trees. They are of fine growth and quality, very straight, of great length and good girth.

March 14.—At Ellingham Hall, near Bungay: 600 Spruce, Larch, and Scotch Firs of capital quality, and a quantity of Ash, Elm, and Willow Timbers.

March 11.—At Clay and Sand Woods, Tetworth: A fall of prime Oak Timber Trees, very long and straight and unequalled in quality.

March 18.—At West Buckland, Somerset: 833 Oak, Elm, and Ash, Maiden, and Pollard Timber Trees.

March 13.—At Corfe, near Taunton, Somerset: 210 Maiden Oak, 60 Maiden Ash, and 80 Pollard Oak Timber Trees.

March 17.—At the Abbey Farm, Eye, Suffolk: A large quantity of Poplar, Fir, Elm, Willow, and Ash Timbers; also Poplar, Fir, Ash, Spruce, and Larch Poles.

March 13.—At Dullingham, Cambridge: 2,000 Larch and Scotch Spiers.

March 18.—At Waresley, Huntingdonshire: A large fall of Ash and Elm Timber Trees; also Larch, Spruce, Birch, Beech, Chesnut, Alder, and Hornbeam Spires, very straight, large, and long.

March 10.—At Bottisham Hall, Cambridge: A quantity of very useful Ash, Elm, Lime, Chesnut, and Beech Trees.

March 12.—At the King's Head, Nazing, Essex: 2,188 Oak Timber Trees of good, and a great portion of large dimensions, and very straight and clear.

March 10.—At Fordham Abbey, Cambridge: 100 capital Timber Trees, and upwards of 300 Stands.

March 11.—At the King's Head Inn, Enfield, Middlesex; 200 Oak Timber Trees of large dimensions and excellent quality, 34 Elm and 24 Ash Trees.

March 12.—At Uffculm, Devon; 130 Maiden Oak and 60 Maiden Ash Trees.

By Private Contract, before the 1st of April next.—287 Oak Trees, of full growth and large dimensions, suitable for all purposes, now standing at Woodside, near Morland, Westmoreland.

March 17.—At Herringswell, Suffolk: 400 Larch Trees, many of them measuring 50 feet in length, and containing upwards of a load of sound timber; 400 Scotch and Spruce Trees, upwards of 45 years' growth; 19 large Willow Trees, and a very large Poplar.

March 13.—At Exning, near Newmarket: 5,000 Larch, Ash, Spruce, Birch, Poplar, and Oak Poles. The Larch are fitted for building purposes.

Shortly.—At Portsea: a valuable cargo of Mahogany and Cedar in Logs and Planks.

MEETINGS OF SCIENTIFIC BODIES

During the ensuing week.

MONDAY, March 10.—*Geographical*, 3, Waterloo-place, 8½ P.M.; *British Architects*, 16, Grosvenor-street, 8 P.M.; *Medical*, Bolt-court, Fleet-street, 8 P.M.

TUESDAY, 11.—*Medical and Chirurgical*, 53, Berners-street, 8½ P.M.; *Civil Engineers*, 25, Great George-street, 8 P.M.; *Zoological*, Hanover-square, 8½ P.M.

WEDNESDAY, 12.—*Society of Arts*, Adelphi, 8 P.M.; *Geological*, Somerset House, 8½ P.M.; *London Institution*, Finsbury-circus, 7 P.M.; *Graphic*, Thatched House Tavern, 8 P.M.; *Pharmaceutical*, 17, Bloomsbury-square, 9 P.M.

THURSDAY, 13.—*Royal*, Somerset House, 8½ P.M.; *Antiquaries*, Somerset House, 8 P.M.; *Royal Society of Literature*, 4, St. Martin's-place, 4 P.M.; *Medico Botanical*, 32, Sackville-street, 8 P.M.

FRIDAY, 14.—*Astronomical*, Somerset House, 8 P.M.; *Royal Institution*, Albemarle-street, 8½ P.M.; *Philological*, 49, Pall Mall, 8 P.M.

SATURDAY, 15.—*Asiatic*, 14, Grafton-street, 2 P.M.; *Westminster Medical*, 32, Sackville-street, 8 P.M.; *Statistical*, 11, Regent-street, 8 P.M. (anniversary).

TO CORRESPONDENTS.

"Inquirer (Limehouse)."—*Each pane of glass should be measured separately within the rebates of the sash-bars. Of irregular panes, the widest part should be taken, and circular panes should be measured as if square.*

"J. W. S."—*We believe the "Hand in Hand" is the oldest fire-office in London; it was established in* 1696. *We cannot refer to the names of the bridges at this moment; only one of them was across the Thames, the others were of less importance.*

"A Constant Reader" *wishes the address of Mr. Galloway, the engineer of the Cairo and Suez Railway.*

"A Subscriber (Reepham)."—*We don't understand the inquiry.*

"Philoclarus," J. J. Blandy," "R. Callow," "Virgil," "W. Rowland," "A Land-owner," "S. M. O.," "Fairplay," *next week.*

Received.—*The Pictorial Gallery of Arts, Part II.* (*C. Knight*)—*A Report of the Proceedings at the first session of the British Archæological Association, edited by Alfred John Dunkin* (*J. Russell Smith*)—*Old England, a Pictorial Museum of Popular Antiquities, Part XV.* (*C. Knight*)—*The Geologist's Text Book, by David T. Ansted, M.A.* (*J. Van Voorst*)—*Geology as a Branch of Education, by D. T. Ansted, M.A.* (*Van Voorst*)—*Bloomfield's Poems, illustrated by Sydney Cooper, &c.* (*Van Voorst*).

ADVERTISEMENTS.

HEAL & SON'S LIST OF BEDDING.—Containing a full description of weights, sizes, and prices, by which purchasers are enabled to judge the articles that are best suited to make a good set of Bedding, sent free by post, on application to their establishment, the largest in London, exclusively for the manufacture and sale of Bedding (no Bedsteads or other furniture being kept). Heal and Son, Feather Dressers and Bedding Manufacturers, 196, opposite the Chapel, Tottenham-court-road.

100 MARBLE CHIMNEY-PIECES.

THE WESTMINSTER MARBLE COMPANY embrace this opportunity of announcing to Builders and the Public generally, that in the first week in March they will offer their very large assortment of Vein, Statuary, Black and Gold, Bardilla, and Black MARBLE CHIMNEY-PIECES, manufactured in a superior manner by machinery, at prices considerably below prime cost, which are far superior in quality and workmanship to those manufactured for public auctions. By purchases made from this stock a great saving will be effected, in addition to the auction expenses.

The Company's reason for making this sacrifice is their intention to make new extensive alterations in their Shew-rooms, previous to setting up their new stock for the ensuing season, of which further notice will be given.

Direct, WESTMINSTER MARBLE COMPANY, EARL STREET, HOLYWELL-STREET, MILLBANK.

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THE BRITISH MUTUAL LIFE ASSURANCE SOCIETY entertains proposals of any description from 20*l.* upwards, involving the contingency of human life, and offers the following advantages to its members.

A BONUS ANNUALLY (in shape of low Premiums), equal to those of other offices, granted every three, five, or seven years, and

THE PROSPECT OF A LARGER BONUS than can possibly be obtained at those offices, in the peculiarly beneficial mode adopted in the distribution of the surplus.

Prospectuses and every information may be had on application at the office, 17, New Bridge-street, Blackfriars.

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Age.	Annual Premium for £100.	Age.	Annual Premium for £100.	Age.	Annual Premium for £100.
20	£1. 15s. 8d.	40	£2. 14s. 9d.	60	£6. 6s. 7d.

CHARLES JAMES THICKE, Resident Secretary.
17, New Bridge-street, Blackfriars.

E. G.'s TRACING-PAPER.—It is warranted to take Ink, Oil, or Water colour, and is sold by MESSRS. ROBERSON AND CO., SOLE AGENTS, 51, LONG-ACRE, at the following cash prices:—

THIN TRACING-PAPER.

60 by 40, at 14*l.* 0s. per Ream, or 15s. 0d. per Quire.
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N.B.—Every sheet is stamped with the Initials of the Manufacturer.

This beautiful and unequalled article is allowed to be the cheapest and most useful Paper hitherto introduced to the public, as will be best proved by a trial.

EMBARRASSED CIRCUMSTANCES.—PERSONS IN DIFFICULTIES being desirous of availing themselves of the Benefit of LORD BROUGHAM'S HUMANE ACT, are requested to apply to MESSRS. GRAND AND CO., of 54, Coleman-street, City, where every information may be obtained, FREE OF EXPENSE, or arrangements can be made with Creditors, by which means the painful necessity of resorting to BANKRUPTCY or INSOLVENCY may in many cases be avoided.—N.B. Partnership accounts adjusted.

WINDOW BLINDS.
TO ARCHITECTS, BUILDERS, CONTRACTORS, AND OTHERS.

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(Late Mills and De Wilde),

72, WELLS STREET, OXFORD STREET, LONDON,

MANUFACTURER of the much-admired SPANISH BLIND. VENETIAN SHADES, adapted to either inside or outside, so much in general use. Blinds for Shop-fronts, Spring Roller Blinds, on the most improved Principle. PATENT ROLLER BLINDS, Mounted with the newly-improved Scotch Furniture.

PATENT WOVE WIRE BLINDS. DWARF VENETIAN BLINDS, &c.

Verandahs to any Design. Transparencies, and every description of Sun Blind, on the most improved principle, and of the very best workmanship and well-seasoned Materials.

F. A. De Wilde begs to observe he pays particular attention to the manufacture of Blinds for exportation; he also invites all parties to pay his Establishment a visit, where they may see every description of Blind in use.

Holland Blinds Cleaned, Calendered, and re-made. Venetian Blinds Painted, Taped, and Lined. Estimates furnished.

N.B.—Old Blinds renovated and made equal to new.

PAINTING BRUSHES OF SUPERIOR QUALITY.
TO PAINTERS, BUILDERS, &c.

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MANUFACTURERS,

11, GREAT MARLBOROUGH-STREET, LONDON,

Offer to Painters, Builders, &c., Painting Brushes of a quality far superior to those generally offered for sale, to which they beg to call the attention of all who prefer quality and durability to apparent cheapness.

000000.—7 in. Dusters.
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Plasterers' Brushes.
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Sash Tools, and Common Tools.
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Lists of Prices of Painting Brushes, and of all other kinds of Brushes, forwarded on application. Established 1777.

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NEWLY-INVENTED

MATHEMATICAL PENCILS,

FOR

METHEMATICIANS, ARCHITECTS, & ENGINEERS,

Warranted to retain a very fine Point.

E. WOLFF AND SON, in introducing their Extra Hard Lead Pencils for Mathematical and Architectural purposes, beg to draw attention to the advantages resulting from their adoption in preference to the ordinary Pencils. They are made to six distinct sizes, by which means they can be fitted to all instruments, and are so constructed that each Pencil may be cut in halves without waste; thus making two Pencils each of a length, and most convenient for use, and obviating the difficulties existing with respect to the ordinary Pencils.

E. W. and Son have also half-round Pencils, suitable for the Spring Bow, thus preventing the necessity of dividing the Pencil down the centre. They are made of extremely Hard Lead, of the finest quality, which will retain a very fine point and give a clear ,even, and distinct line.—Price 4s. per dozen.

PATTERN OF SIZES.

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A Sample of each size will be sent by Post to any part of the Kingdom, on the receipt of Postage Stamps equal to the amount.

Drawing Pencils of the best quality, for Architects and Engineers, warranted free from grit: the HHH and HHHH are particularly recommended.—Price 5s. per dozen.

May be had of all Instrument Makers and Stationers, and at the Manufacturers', 23, Church-street, Spitalfields, London.

HATCHER'S BENNENDEN TILE-MACHINE, Manufactured and Sold only by COTTAM and HALLEN, Engineers, Agricultural Implement Makers, &c., 2, Winsley-street, Oxford-street, London.

This is the most efficient Machine that has been invented for the purpose of making Drain Tiles. Any shaped Tile can be made by merely changing the die, which can be done in a few minutes. It requires but few hands, viz., one man and three boys. With this amount of labour, the product of a day of 10 hours is as follows, viz:—

1 inch diameter of	Tile, 11,000	1½ inches diameter of	Tile, 5,800
1¼ ,, ,,	,, 8,000	2½ ,, ,,	,, 3,200

The Machine is moveable down the drying-sheds, so that it requires no extra boys to carry the Tiles, nor are shelves required in drying. It has been in full operation for upwards of four months at Hempstead Park, near Cranbrook, Kent. No charge made for Patent dues or licence. The purchase of the machine includes free use of it.